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**RESULTS OF AN EXPERIMENTAL INVESTIGATION  
TO DETERMINE SEPARATION CHARACTERISTICS  
FOR THE ORBITER/747 USING A 0.0125-SCALE  
MODEL (48-0 AX1318I-1 747) IN THE AMES  
RESEARCH CENTER 14-FOOT WIND TUNNEL  
(CA23B), VOLUME 1**

**CHRYSLER CORP., NEW ORLEANS, LA. SPACE  
DIV**

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VOLUME 1 OF 2

RESULTS OF AN EXPERIMENTAL INVESTIGATION TO  
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ORBITER/747 USING A 0.0125-SCALE MODEL (48-0  
AX13181-1 747) IN THE AMES RESEARCH CENTER  
14-FOOT WIND TUNNEL (CA23B)

by

V. Esparza  
Rockwell International Space Division

Prepared under NASA Contract Number NAS9-13247

by

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for

Engineering Analysis Division  
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WIND TUNNEL TEST SPECIFICS:

Test Number: ARC 14-120  
NASA Series Number: CA23B  
Model Number: 48-0 Orbiter/AX1318I-1 747  
Test Dates: June 23 through July 22, 1975  
Occupancy Hours: 180

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ABSTRACT

This report documents aerodynamic separation data obtained from a wind tunnel test of an 0.0125-scale SSV Orbiter model of a VC70-000002 Configuration and a 0.0125-scale 747 model built by The Boeing Company.

Separation data were obtained at a Mach number of 0.6 and three incidence angles ( $i_0$ ) of  $4^\circ$ ,  $6^\circ$ , and  $8^\circ$ . The orbiter angle of attack was varied from 0 to 14 degrees.

Longitudinal, lateral and normal separation increments were obtained for fixed 747 angles of attack of  $0^\circ$ ,  $2^\circ$ , and  $4^\circ$  while varying orbiter angle of attack. Control surface settings on the 747 carrier included rudder deflections of  $0^\circ$  and  $10^\circ$  and horizontal stabilizer deflections of  $-1^\circ$  and  $+5^\circ$ .

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## SCHEDULE OF COEFFICIENTS PLOTTED:

- (A) DCL, DCD, DCLM versus DZ
- (B) CL, CD, CLM versus DZ
- (C) CL, CD, CLM, CY, CYN, CEL versus DZ
- (D) CY, CYN, CEL, DCL, DCD, DCLM versus DZ
- (E) CL, CD, CLM versus ALPHAC
- (F) CL, CD, CLM versus ALPHAO
- (G) CL, CD, CLM versus DX

# NOMENCLATURE

## General

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
a		speed of sound; m/sec, ft/sec
C <sub>p</sub>	CP	pressure coefficient; $(P_i - P_\infty)/q$
M	MACH	Mach number; $V/a$
P		pressure; N/m <sup>2</sup> , psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2 \rho V^2$ , N/m <sup>2</sup> , psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
$\alpha$	ALPHAC	747 angle of attack, degrees
$\alpha_0$	ALPHAO	Orbiter angle of attack, degrees
$\beta$	BETA BETAC	747 angle of sideslip, degrees
$\beta_0$	BETAO	Orbiter angle of sideslip, degrees
$\psi$	PSI	angle of yaw, degrees
$\phi$	PHIO PHIC	Orbiter angle of roll, degrees 747 angle of roll, degrees
$i_0$	IORB	Orbiter incidence relative to 747 FRL, degrees
$\rho$		mass density; kg/m <sup>3</sup> , slugs/ft <sup>3</sup>

### Reference & C.G. Definitions

A <sub>b</sub>		base area; m <sup>2</sup> , ft <sup>2</sup>
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
$\frac{l_{REF}}{\bar{c}}$	LREF	reference length or wing mean aerodynamic chord; m, ft

# NOMENCLATURE (Continued)

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
S	SREF	wing area or reference area; $m^2$ , $ft^2$
MRC	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

## SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
$\infty$	free stream

## Body-Axis System

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
$C_N$	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
$C_A$	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
$C_Y$	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
$C_{A_b}$	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(p_b - p_\infty)/qS$
$C_{A_f}$	CAF	forebody axial force coefficient; $C_A - C_{A_b}$
$C_m$	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS \ell_{REF}}$

# NOMENCLATURE (Continued)

## Body-Axis System

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
$C_n$	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
$C_\ell$	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$

## Stability-Axis System

$C_L$	CL	lift coefficient; $\frac{\text{lift}}{qS}$
$C_D$	CD	drag coefficient; $\frac{\text{drag}}{qS}$
$C_Y$	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
$C_{D_b}$	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
$C_{D_f}$	CDF	forebody drag coefficient; $C_D - C_{D_b}$
$C_m$	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
$C_n$	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
$C_\ell$	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
L/D	L/D	lift-to-drag ratio; $C_L/C_D$
L/D <sub>f</sub>	L/DF	lift to forebody drag ratio; $C_L/C_{D_f}$

# NOMENCLATURE (Continued)

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
$\Delta C_L$	DCL	incremental lift coefficient
$\Delta C_D$	DCD	incremental drag coefficient
$\Delta C_m$	DCLM	incremental pitching-moment coefficient
$\Delta C_Y$	DCY	incremental side-force coefficient
$\Delta C_n$	DCYN	incremental yawing-moment coefficient
$\Delta C_l$	DCBL	incremental rolling-moment coefficient
	XZCP	longitudinal center of pressure in normal force plane
	XYCP	lateral center of pressure in side force plane
$\delta_r$	RUDDER	747 rudder surface deflection angle, positive deflection trailing edge to the left, degrees
$\delta_e$	ELEVON	Orbiter elevon surface deflection angle, positive deflection trailing edge down, degrees
$\delta_A$	STAB	747 stabilizer surface deflection angle, positive deflection trailing edge down, degrees
<u>ORBITER SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
$C_{P_{co}}$	CPC	Orbiter balance cavity pressure coefficient
$C_{P_{B1}}$	CPB1	Orbiter tail-cone-off base pressure coefficient
$C_{P_{B2}}$	CPB2	Orbiter tail-cone-off base pressure coefficient

# NOMENCLATURE (Concluded)

<u>ORBITER SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
$C_{PB3}$	CPB3	Orbiter tail-cone-off pressure coefficient
$C_{PBE}$	CPE3	Dummy strut pressure coefficient
$C_{PS1}$	CPS1	Pressure coefficient on L.H. side of Strut $S_1$
$C_{PS2}$	CPS2	Pressure coefficient on R.H. side of Strut $S_1$
<u>747 SYMBOL</u>		
$C_{PCC}$	CPCC	747 sting cavity pressure coefficient
$C_{PSB1}$	CPSB1	747 sting base exit pressure coefficient
$C_{PSB2}$	CPSB2	747 sting base exit pressure coefficient
<u>SEPARATION PARAMETERS</u>	<u>PLOT SYMBOL</u>	
$\Delta X$	DX	Longitudinal displacement, ft.
$\Delta Y$	DY	Lateral displacement, ft.
$\Delta Z$	DZ	Vertical displacement, ft.

# REMARKS

The nominal orbiter elevon deflections tested were  $0^\circ$  and  $+5^\circ$ . The actual measured elevon deflections were as follows:

NOMINAL	MEASURED			
	$\delta_e$ Left		$\delta_e$ Right	
	Outboard	Inboard	Outboard	Inboard
$5^\circ$	$4^\circ 59'$	$5^\circ 10'$	$4^\circ 55'$	$4^\circ 53'$

The zero elevon deflection was not measured since it faired into the contour of the VC70-000002 orbiter vehicle lines.

The 747 carrier nominal horizontal stabilizer settings used in the test were  $\delta_A = -1^\circ$  and  $\delta_A = 5^\circ$ . The actual measured deflections were  $\delta_A = -53'$  and  $\delta_A = +4^\circ 48'$ , respectively.



## CONFIGURATIONS INVESTIGATED

The Orbiter model was a 0.0125 scale representation of the Rockwell International Space Shuttle Vehicle built to Rockwell lines VC70-000002. The basic orbiter model is of the blended wing-body design utilizing a double delta wing ( $75^\circ/45^\circ$ ), full span elevons with deflection capability, a centerline vertical tail with rudder deflection capability, a canopy, a body flap and an orbital maneuvering system (OMS) mounted on the aft fuselage sidewalls.

A tail cone fairing used to cover the MPS nozzles and OMS nozzles was tested for a limited number of runs.

The .0125 scale model of the Rockwell International Space Shuttle Vehicle is constructed primarily of 7075-T6 aluminum. The orbiter wing panels are made from 2024-T-851 aluminum while the elevon brackets are made from ARMCO 17-4 PH CRES.

### Model Nomenclature

O<sub>1</sub> = B<sub>64</sub> C<sub>14</sub> F<sub>14</sub> E<sub>44</sub> M<sub>18</sub> N<sub>94</sub> N<sub>92</sub> R<sub>18</sub> V<sub>23</sub> W<sub>116</sub>  
O<sub>2</sub> = B<sub>64</sub> C<sub>14</sub> F<sub>14</sub> E<sub>44</sub> M<sub>18</sub> N<sub>94</sub> N<sub>92</sub> W<sub>116</sub>  
O<sub>3</sub> = B<sub>64</sub> C<sub>14</sub> F<sub>14</sub> E<sub>44</sub> M<sub>18</sub> R<sub>18</sub> V<sub>23</sub> W<sub>116</sub> TC<sub>4</sub>  
O<sub>4</sub> = B<sub>64</sub> C<sub>14</sub> F<sub>14</sub> E<sub>44</sub> M<sub>18</sub> N<sub>92</sub> R<sub>18</sub> V<sub>23</sub> W<sub>116</sub>

### Component

### Description

B<sub>64</sub>

Orbiter fuselage per Rockwell lines  
VC70-000002, Model Drawing SS-A01377

CONFIGURATIONS INVESTIGATED - (Continued)

<u>Component</u>	<u>Description</u>
C <sub>14</sub>	Orbiter canopy per Rockwell lines VC70-000002, Model Drawing SS-A01377
E <sub>44</sub>	Orbiter full span, unswept hingeline, 6-inch gapped elevons per Rockwell lines VC70-000002, Model Drawing SS-A01377
F <sub>14</sub>	Orbiter body flap per Rockwell lines VC70-000002, Model Drawing SS-A01377
M <sub>18</sub>	Orbiter OMS/RCS pods per Rockwell lines VC70-000002, Model Drawing SS-A01377
N <sub>94</sub>	Orbiter main engine nozzles per Rockwell lines VC70-000002, Model Drawing SS-A01377
N <sub>92</sub>	Orbiter OMS engine nozzles per Rockwell lines VC70-000002, Model Drawing SS-A01377
R <sub>18</sub>	Orbiter rudder per Rockwell lines VC70-000002, Model Drawing SS-A01377
V <sub>23</sub>	Orbiter vertical tail per Rockwell lines VC70-000002, Model Drawing SS-A01377
W <sub>116</sub>	Orbiter double delta wing per Rockwell lines VC70-000002, Model Drawing SS-A01377
TC <sub>4</sub>	Orbiter tail cone fairing which covers the MPS nozzles and the OMS nozzles and base.

The attach hardware utilized in conjunction with separation testing consisted of several configurations. The faired aft attach hardware (AT<sub>99</sub>) was used throughout the duration of the separation test. Incidence angles of 4°, 6°, and 8° were tested utilizing the faired forward attach hardware AT<sub>96</sub>, AT<sub>97</sub>, and AT<sub>98</sub>.

AT<sub>97</sub> was used for  $i_0 = 6^\circ$ , and  $8^\circ$ .

# CONFIGURATIONS INVESTIGATED - (Continued)

The 0.0125 scale 747 carrier model, fabricated by The Boeing Company, utilized 200 sq. ft. stabilizer tip fins, flaps at 0 degrees and standard in-flight speed brakes extended. The horizontal tail was capable of deflecting  $+35^{\circ}$  to  $-11^{\circ}$  in two degree increments (FRP).

The following nomenclature was used to designate model components for The Boeing Company 0.0125-scale 747 Carrier Model:

<u>Component</u>	<u>Description</u>
B <sub>27.8</sub>	Fuselage
W <sub>44.1</sub>	Wing
V <sub>9.1</sub>	Basic Vertical Tail
H <sub>15</sub>	Horizontal Tail
H <sub>15.6</sub>	Horizontal Tail with Vertical Fins
M <sub>25</sub>	Inboard Nacelle struts
M <sub>26</sub>	Outboard Nacelle struts
N <sub>57</sub>	Inboard Nacelles
N <sub>58</sub>	Outboard Nacelles
S <sub>1-12</sub>	Spoiler panels
T <sub>14</sub>	Flap Track Fairing
S <sub>1</sub>	Orbiter support blade strut, upper entry position

The configurations investigated utilizing the components previously described were as follows:

# CONFIGURATIONS INVESTIGATED - (Concluded)

<u>Configuration</u>	<u>Orbiter Incidence (<math>i_o</math>)</u>
747/1 AT <sub>96</sub>	4°
747/1 AT <sub>97</sub>	6°
747/1 AT <sub>98</sub>	8°
747/1 AT <sub>96</sub> O <sub>2</sub> S <sub>1</sub>	4°
747/1 AT <sub>97</sub> O <sub>2</sub> S <sub>1</sub>	6°
747/1 AT <sub>98</sub> O <sub>2</sub> S <sub>1</sub>	8°
747/1 AT <sub>96</sub> O <sub>3</sub> S <sub>1</sub>	4°
747/1 AT <sub>97</sub> O <sub>3</sub> S <sub>1</sub>	6°
747/1 AT <sub>98</sub> O <sub>3</sub> S <sub>1</sub>	8°
O <sub>2</sub> S <sub>1</sub>	--
O <sub>3</sub> S <sub>1</sub>	--

## INSTRUMENTATION

The orbiter was mounted on the NASA/Ames 1.0 inch Task MK XIV internal force balance and the 747 Carrier was mounted on the NASA/Ames 1.5 inch MK II Internal Force balance.

Pressure instrumentation in the orbiter consisted of a sting cavity pressure tap ( $P_{CO}$ ) and a pressure tap ( $P_{S1}$ ,  $P_{S2}$ ) on each side of strut  $S_1$ . When the tail cone ( $TC_4$ ) was removed, three (3) base pressures were measured- $P_{B1}$ ,  $P_{B2}$ , and  $P_{B3}$ . See figures 2g and 2i.

Pressure instrumentation in the 747 carrier consisted of sting cavity pressure tap ( $P_{CC}$ ) and two static pressure taps ( $P_{SB1}$ ,  $P_{SB2}$ ). These tap locations are shown in figure 2i.

### TEST FACILITY DESCRIPTION

The Ames 14-Foot Transonic Wind Tunnel was created by extensive modification of the former Ames 16-Foot High Speed Wind Tunnel. It has an adjustable, flexible-wall nozzle and the test section is slotted on all four sides to permit transonic testing. The air circuit is closed except for the air exchanger in a low-speed section of the circuit, which is controlled to maintain the air temperature within suitable limits.

The air is driven by a three-stage, axial-flow compressor powered by three electric motors mounted in tandem outside the wind tunnel. The drive system is rated 110,000 horsepower continuously or 132,000 horsepower for one hour. The speed of the motors is continuously variable over the operating range.

#### Performance:

Mach number	0.6 to 1.2, continuously variable
Pressure, stagnation, atm	1.0
Reynolds number, per ft	$2.8 \times 10^6$ to $4.2 \times 10^6$
Temperature, stagnation	Controllable over limited range by throttling the air exchanger. Generally about 640° R to avoid condensation of moisture in the test section

#### Dimensions:

Test section height, ft	13.50
Test section width, ft	13.71 at upstream end 13.92 at downstream end
Test section length, ft	33.75

## DATA REDUCTION

Model force and moment data were reduced to coefficient form in the body and stability axes systems. Coefficient data were computed separately for each vehicle using its own reference dimensions. Moment data for each vehicle is reduced about its own reference center of gravity.

Relative separation angles and displacements were computed for the orbiter with respect to the 747 carrier. These values are presented in the 747 body axis system and displacement will represent the movement of the orbiter aft attachment point from its base position. The orbiter base position is defined as the orbiter in the mated configuration.

All model positions and attitude data are corrected for support hardware deflections.

### Reference Dimensions and Constants

<u>747 Symbol</u>	<u>Definition</u>	<u>Model Scale</u>	<u>Full Scale</u>
$S_c$	Wing reference area, $ft^2$	0.859	5500
$b_c$	Wing span, in.	29.351	2348.04
$\bar{c}_c$	Wing, MAC, in.	4.097	327.78
$MRCX_c$	Moment Ref. Center 747 M.S.	16.749	1339.90
$MRCZ_c$	Moment Ref. Center 747 W.L.	2.385	190.75
$BMCZ_c$	Balance Moment Center 747 M.S.	16.608	1328.64
$BMCZ_c$	Balance Moment Center 747 W.L.	2.896	231.68

# DATA REDUCTION (Continued)

<u>Orbiter Symbol</u>	<u>Definition</u>	<u>Model Scale</u>	<u>Full Scale</u>
$S_o$	Wing reference area, $ft^2$	0.420	2690
$b_o$	Wing span, in	11.709	936.68
$\bar{c}_o$	Wing MAC, in.	5.935	474.81
$MRCX_o$	Moment Ref. Center Orbiter M.S.	13.862	1109
$MRCZ_o$	Moment Ref. Center Orbiter W.L.	4.687	375
$BMCX_o$	Balance Moment Center Orb. M.S.	13.305	1064
$BMCZ_o$	Balance Moment Center Orb. W.L.	5.377	430

Incremental force and moment coefficients were calculated for the orbiter data as follows:

$$\Delta C_{ORB}^{(747)} = C_{ORB}^{(747)} - C_{ORB}^{(ISOL)}$$

where:

$$\Delta C_{ORB}^{(747)} = \text{Proximity increment on orbiter coefficients}$$

$$C_{ORB}^{(747)} = \text{Coefficient of orbiter in presence of carrier}$$

$$C_{ORB}^{(ISOL)} = \text{Isolated orbiter coefficient}$$

Incremental force and moment coefficients were also calculated for the carrier as follows:

$$\Delta C_{747}^{(ORB)} = C_{747}^{(ORB)} - C_{747}^{(ISOL)}$$

where:

$$\Delta C_{747}^{(ORB)} = \text{Proximity increment on carrier coefficients}$$



DATA REDUCTION (Concluded)

$C_{747}^{(ORB)}$  = Coefficient of carrier in presence of orbiter

$C_{747}^{(ISOL)}$  = Isolated carrier coefficient

Refer to Table VI for a detailed summary.

## REFERENCES

### Reports and Internal Letters

IL, SAS/WTO/74-172, Addendum #12, "Sting Design and Fabrication Effort Required for Support of Test CA23 Using Model 48-0/747."

IL, SAS/WTO/74-172, Addendum #13, "Completion of CA23 Sting Hardware Fabrication," dated February 4, 1975.

IL, SAS/WTO/74-172, Addendum #14, "Orbiter/747 Attach Hardware for CA23," dated February 18, 1975.

IL, SAS/WTO/74-172, Addendum #15, "Model Requirements for 0.0125-Scale 48-0/747 Models to Support Tests CA23 and AA2."

IL, SAS/WTO/74-172, Addendum #17, "Additional Model 48-0 Requirements," dated March 4, 1975.

IL, SAS/WTO/74-172, Addendum #20, "Model Requirements for 48-0 in Support of Test CA21," dated May 2, 1975.

IL, SAS/WTO/75-101, "Dimensional Verification of Model 48-0 During CA21 MRR and CA23," dated April 2, 1975.

SD75-SH-0290A, "Pretest Information for a Test of an 0.0125 Scale Model 48-0 Orbiter/747 Flight Test Configuration in the ARC 14 Foot Tunnel CA23B," June, 1975.

### Drawings

VC70-000002, "Design Geometry - Orbiter," dated June 10, 1974.

SS-A01377, "Orbiter Assembly - #48-0, 0.0125-Scale SSV, Ferry Separation," dated August 9, 1974.

SS-A01559, Fwd. & Aft Attach Supports 48-0, .0125-Scale SSV Orbiter," dated March 11, 1975.

SS-A01499, "Installation-0.0125-Scale SSV Orb/747, Carrier Ferry Sep., Ames 14-Ft WT (#48-0)," dated January 9, 1975.

W-1132SA, "Sting Assy - 48-0 SSV, Carrier, Ferry/Separation," dated August 9, 1974.

REFERENCES (Concluded)

W-1133SA, "Sting Assy - Orbiter Ferry Separation, #48-0," dated January 13, 1975.

W-1142-SA, "Sting and Sting Adapter-0.0125-Scale SSV Orb., Carrier, Ferry/Separation #48-0," dated January 29, 1975.

W-1048-S, "Sting - (SSV-Delta and Str. Wing), Ames 6X6 SSWT," dated May 6, 1975.

W-1135-A, "Adapter Assy - #48-0 Orbiter/Carrier, Mated," dated August 17, 1974.

The Boeing Company - 747 Carrier

747-MD-461, "General Arrangement - 747 Space Shuttle Orbiter Carrier Aircraft (Piggyback Configuration)," dated July 15, 1974.

747-MD-576, "Structural Arrangement - Orbiter Aft Support, 747 MOD," dated August 1, 1974.

AX 1318I-1, "747 Model Drawings 0.0125 Scale".

TABLE I

TEST : CA23B		DATE : 11/18/75	
TEST CONDITIONS			
MACH NUMBER	REYNOLDS NUMBER (per ft X 10 <sup>6</sup> )	DYNAMIC PRESSURE (pounds/sq.ft)	STAGNATION TEMPERATURE (degrees Fahrenheit)
.6	3.6	417	92
.5	3.1	315	70
.3	2	126	71

BALANCE UTILIZED: NASA/ARC 1.0 inch Task MK XIV

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	<u>800 lb.</u>	<u>                    </u>	<u>                    </u>
SF	<u>400 lb.</u>	<u>                    </u>	<u>                    </u>
AF	<u>100 lb.</u>	<u>                    </u>	<u>                    </u>
PM	<u>                    </u>	<u>                    </u>	<u>                    </u>
RM	<u>250 in.-lb.</u>	<u>                    </u>	<u>                    </u>
YM	<u>                    </u>	<u>                    </u>	<u>                    </u>

COMMENTS: **This balance was used to obtain Orbiter separation data.**BALANCE UTILIZED: NASA/ARC 1.5 inch MK II

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	<u>1000 lb.</u>	<u>                    </u>	<u>                    </u>
SF	<u>500 lb.</u>	<u>                    </u>	<u>                    </u>
AF	<u>100 lb.</u>	<u>                    </u>	<u>                    </u>
PM	<u>                    </u>	<u>                    </u>	<u>                    </u>
RM	<u>800 in.-lb.</u>	<u>                    </u>	<u>                    </u>
YM	<u>                    </u>	<u>                    </u>	<u>                    </u>

COMMENTS: **This balance was used to obtain 747 Carrier Separation data.**

27

NOTE: AT1 = AT16 OR AT97 OR AT14X E

TABLE II. -- Continued

TEST: CA23B(ARC 14-120)

DATE: 10/11/75

REVISED

DATA SET/RUN NUMBER COLLATION SUMMARY

TEST RUN NUMBER

DATA SET IDENTIFIER	CONFIGURATION	SCMD.		747 ORB. PARAMETER/VALUES		$\Delta Z$												
		$\alpha_c$	$\beta_c$	$\delta_c$	$\gamma_c$	$\Delta Z$	M	2	3.5	7.5	10	15	30	45	50	60		
RNHO24	747/1 AT1 $\phi_2 S_1$	A	0	-1/0	0	6	0%	7	0.6			241	242	243	244	245	246	247
25	$\gamma$	A	0	-1/0	0	8	0%	6				257	252	253	254	255	256	
27	747/1 AT1 $\phi_3 S_1$	A		5/0		8	0%	6				261	262	263	264	265	266	
28		B				6	10%	7			281	282	283	284	285	286	287	
29		B				8	10%	6				291	292	293	294	295	296	
30		B				8	20%	6				301	302	303	304	305	306	
31		B				6	20%	6				311	312	313	314	315	316	
32		B				6	0/10	7			321	322	323	324	325	326	327	
33		B				8	0/10	6				331	332	333	334	335	336	
34		A				6	9%	9		341	342	343	344	345	346	347	348	349
35		A		$\gamma$		4		6			351	352	353	354	355	356		
36		B		5/10	$\gamma$	6		9		361	362	363	364	365	366	367	368	369
37		A		-1/0	0	6		9		371	372	373	374	375	376	377	378	379
38	$\gamma$	A		5/0	5	6		9		381	382	383	384	385	386	387	388	389
39	747/1 AT1 $\phi_2 S_1$	B		5/10		6		7			391	392	393	394	395	396	397	
40		A		5/0		4		6	$\gamma$		401	402	403	404	405	406		
41		B		5/0		4		6	0.5		411	412	413	414	415	416		
42	$\gamma$	B	$\gamma$	5/0	$\gamma$	4	$\gamma$	6	0.3		421	422	423	424	425	426		

$\alpha$  OR  $\beta$

SCHEDULES

COEFFICIENTS

NO  $\alpha = 4^\circ$

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DATE: 10/11/75 REVISED

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582 1  
583 1  
584 1  
585 1  
586 1  
587 1  
588 1  
589 1  
590 1  
591 1  
592 1  
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597 1  
598 1  
599 1  
600 1  
601 1  
602 1  
603 1  
604 1  
605 1  
606 1  
607 1  
608

TABLE III (MODEL DIMENSIONAL DATA)

## a. Orbiter Model

MODEL COMPONENT : BODY - OML - B<sub>FL</sub>GENERAL DESCRIPTION : The body is an elongated structure containing the Crew Module and Cargo Bay. Same as IML plus 1" TPS.MODEL SCALE: 0.0125DRAWING NUMBER : VC70-000002, SS-A01377

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ( $X_0 = 235$ to $1519$ ), In.	<u>1284.0</u>	<u>16.050</u>
Max Width ( $X_0 = 1516.8$ ), In.	<u>262.718</u>	<u>3.284</u>
Max Depth ( $X_0 = 1463.316$ ), In.	<u>348.575</u>	<u>3.107</u>
Fineness Ratio	<u>5.1365</u>	<u>5.1365</u>
Area - Ft <sup>2</sup>	<u></u>	<u></u>
Max. Cross-Sectional	<u>340.82</u>	<u>0.053</u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>



TABLE III (Cont'd)

## a. Orbiter Model

MODEL COMPONENT : CANOPY (OUTER MOLD LINE) - C.GENERAL DESCRIPTION : The canopy is that part of the forward fuselage which covers the Crew Module. One inch TPS thickness on the canopy.Configuration 140C.MODEL SCALE: 0.0125DRAWING NUMBER : VC70-000002, SS-A01377

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ( $X_0=435.196 - 670.0$ ), In.	<u>234.80</u>	<u>2.935</u>
Max Width ( $X_0 = 594.0$ ), In.	<u>195.58</u>	<u>2.445</u>
Max Depth	<u>          </u>	<u>          </u>
Fineness Ratio	<u>          </u>	<u>          </u>
Area	<u>          </u>	<u>          </u>
Max. Cross-Sectional	<u>          </u>	<u>          </u>
Planform	<u>          </u>	<u>          </u>
Wetted	<u>          </u>	<u>          </u>
Base	<u>          </u>	<u>          </u>

## WINDSHIELD PLANES:

$$.7012 X_0 - .2552 Y_0 - .6656 Z_0 - 6.1789 = 0$$

$$.5710 X_0 - .5641 Y_0 - .5965 Z_0 + 32.7354 = 0$$

$$.2636 X_0 - .7564 Y_0 - .5965 Z_0 + 189.4099 = 0$$

TABLE III (Cont'd)

## a. Orbiter Model

MODEL COMPONENT : ELEVON - E<sub>44</sub>GENERAL DESCRIPTION : 6.0 In. F.S. gaps machined into E<sub>24</sub> elevon.Flipper doors, centerbody pieces, and tipseals are not simulated. (Data are for one side.)MODEL SCALE: 0.0125DRAWING NUMBER : Not available.

## DIMENSIONS :

	FULL SCALE	MODEL SCALE
Area - Ft <sup>2</sup>	<u>210.00</u>	<u>0.033</u>
Span (equivalent), In.,	<u>349.2</u>	<u>4.365</u>
Inb'd equivalent chord, In.	<u>118.0</u>	<u>1.475</u>
Outb'd equivalent chord, In.	<u>55.19</u>	<u>0.690</u>
Ratio movable surface chord/ total surface chord	<u></u>	<u></u>
At Inb'd equiv. chord	<u>0.2096</u>	<u>0.2096</u>
At Outb'd equiv. chord	<u>0.4004</u>	<u>0.4004</u>
Sweep Back Angles, degrees	<u></u>	<u></u>
Leading Edge	<u>0.00</u>	<u>0.00</u>
Trailing Edge	<u>- 10.056</u>	<u>- 10.056</u>
Hingeline	<u>0.00</u>	<u>0.00</u>
(Product of area & $\bar{c}$ )		
Area Moment (Non-chordwise), Ft <sup>3</sup>	<u>1587.25</u>	<u>0.003</u>
Mean Aerodynamic Chord, In.	<u>90.7</u>	<u>1.134</u>

TABLE III (Cont'd)

## a. Orbiter Model

MODEL COMPONENT: BODY FLAP - F<sub>14</sub>GENERAL DESCRIPTION: The body flap is a secondary movable airfoil located at the aft end of the body.MODEL SCALE: 0.0125DRAWING NUMBER: VC70-000002

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - Ft <sup>2</sup>	<u>135.75</u>	<u>0.021</u>
Span (equivalent), In.	<u>241.33</u>	<u>3.017</u>
Inb'd equivalent chord, In.	<u>81.0</u>	<u>1.013</u>
Outb'd equivalent chord, In.	<u>81.0</u>	<u>1.013</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.0</u>	<u>0.0</u>
At Outb'd equiv. chord	<u>0.0</u>	<u>0.0</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.0</u>	<u>0.0</u>
Tailing Edge	<u>0.0</u>	<u>0.0</u>
Hingeline	<u>0.0</u>	<u>0.0</u>
(Product of Area & $\bar{c}$ )		
Area Moment (Normal to hingeline), Ft <sup>3</sup>	<u>916.31</u>	<u>0.0018</u>
Mean Aerodynamic Chord, In.	<u>81.0</u>	<u>1.013</u>

TABLE III (Cont'd)

## a. Orbiter Model

MODEL COMPONENT : OMS PODS (OML) - M<sub>18</sub>

GENERAL DESCRIPTION : The OMS pods are nacelles housing the maneuvering engines and are located on the fuselage on either side of the vertical tail. Same as IML plus 1/2" TPS.

MODEL SCALE: 0.0125DRAWING NUMBER: VC70-000002, VL70-843001

## DIMENSIONS :

	FULL SCALE	MODEL SCALE
Length ( $X_0=1311 - 1511$ ), In.	<u>200.00</u>	<u>2.500</u>
Max Width ( $X_0 = 304$ ), In.	<u>135.75</u>	<u>1.697</u>
Max Depth ( $X_0 = 304$ ), In.	<u>74.5</u>	<u>0.931</u>
Fineness Ratio	<u></u>	<u></u>
Area - Ft <sup>2</sup>	<u></u>	<u></u>
Max. Cross-Sectional	<u>58.169</u>	<u>0.009</u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>

TABLE III (Cont'd)

a. Orbiter Model

MODEL COMPONENT: MPS NOZZLES - N<sub>94</sub>

GENERAL DESCRIPTION: The main propulsion nozzles are laval-bell shaped and are located on the aft planes of the orbiter. These dimensions are external and are not to be scaled for plume tests.

MODEL SCALE: 0.0125

DRAWING NUMBER: VC70-000C02, VL70-008144; RS009169, RS009107, 13M15000

DIMENSIONS:	FULL SCALE	MODEL SCALE
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane	157.00	1.963
Throat to Exit Plane		
Diameter - In.		
Exit	97.914	1.224
Throat		
Inlet		
Area - ft <sup>2</sup>		
Exit	52.290	0.008
Throat		
Gimbal Point (Station) - In.		
Upper Nozzle		
X <sub>0</sub>	1445.0	18.063
Y <sub>0</sub>	0.0	0.0
Z <sub>0</sub>	443.0	5.538
Lower Nozzles		
X <sub>0</sub>	1468.170	18.352
Y <sub>0</sub>	53.00	0.663
Z <sub>0</sub>	312.640	4.283
Null Position - Deg.		
Upper Nozzle		
Pitch	16.0	16.0
Yaw	0.0	0.0
Lower Nozzle		
Pitch	10.0	10.0
Yaw	3.5	3.5

TABLE III (Cont'd)

## a. Orbiter Model

MODEL COMPONENT: NOZZLES - No. 2

GENERAL DESCRIPTION: The two orbiter maneuvering system nozzles are laval-bell shaped and are located at the aft end of the OMS pods. These dimensions are external and are not to be used for plume tests.

MODEL SCALE: 0.0125DRAWING NUMBER: MC62100009, VC70-000002, VL70-008401, Aerojet 1181900

## DIMENSIONS:

	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane	<u>56.00</u>	<u>0.700</u>
Throat to Exit Plane	<u>56.00</u>	<u>0.700</u>
Diameter - In.		
Exit		
Throat	<u>45.09</u>	<u>0.564</u>
Inlet		
Area - ft <sup>2</sup>		
Exit		
Throat	<u>11.09</u>	<u>0.139</u>
Gimbal Point (Station) - In.		
X	<u>1518.0</u>	<u>18.975</u>
Y	<u>88.0</u>	<u>1.100</u>
Z	<u>492.0</u>	<u>6.150</u>
Null Position - Deg.		
Pitch	<u>15.82°</u>	<u>15.82°</u>
Yaw	<u>6.5°</u>	<u>6.5°</u>

TABLE III (Cont'd)

a. Orbiter model

MODEL COMPONENT RUDDER - R<sub>18</sub>

GENERAL DESCRIPTION The rudder is a secondary movable airfoil at the trailing edge of the vertical fin that imparts yaw forces. This dimensional data was calculated from the OML master dimensions 7-19-74.

MODEL SCALE: 0.0125

DRAWING NUMBER \_\_\_\_\_

DIMENSIONS :	FULL SCALE	MODEL SCALE
Area = Ft <sup>2</sup>	<u>97.148</u>	<u>0.015</u>
Span (equivalent) , In.	<u>198.614</u>	<u>2.483</u>
Inb'd equivalent chord, In.	<u>90.07</u>	<u>1.126</u>
Outb'd equivalent chord , In.	<u>50.80</u>	<u>0.635</u>
Ratio movable surface chord/ total surface chord	<u>                    </u>	<u>                    </u>
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees	<u>                    </u>	<u>                    </u>
Leading Edge	<u>34.833</u>	<u>34.833</u>
Trailing Edge	<u>26.249</u>	<u>26.249</u>
Hingeline (MAC X AREA, Ft <sup>3</sup> )	<u>34.833</u>	<u>34.833</u>
Area Moment ( <del>MAC X AREA</del> )	<u>584.99</u>	<u>0.0011</u>
Mean Aerodynamic Chord, In.	<u>72.260</u>	<u>0.903</u>

TABLE III (Cont'd)

a. Orbiter Model

MODEL COMPONENT: VERTICAL - V<sub>23</sub> (Outer Mold Lines)

GENERAL DESCRIPTION: The vertical tail is double-wedge shaped and mounted dorsally on the aft fuselage. These data correspond to configuration 140C.

MODEL SCALE: 0.0125

DRAWING NUMBER: VC70-000002, master dimensions.

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo) - Ft <sup>2</sup>		
Planform	413.253	0.065
Span (Theo) - In.	315.72	3.947
Aspect Ratio	1.675	1.675
Rate of Taper	0.507	0.507
Taper Ratio	0.404	0.404
Sweep-Back Angles, Degrees.		
Leading Edge	45.000	45.000
Trailing Edge	26.25	26.25
0.25 Element Line	41.13	41.13
Chords:		
Root (Theo) WP	268.50	3.356
Tip (Theo) WP	108.47	1.356
MAC	199.81	2.498
Fus. Sta. of .25 MAC	1463.50	18.294
W.P. of .25 MAC	635.52	7.944
B.L. of .25 MAC	0.0	0.0
Airfoil Section		
Leading Wedge Angle - Deg.	10.00	10.00
Trailing Wedge Angle - Deg.	14.92	14.92
Leading Edge Radius	2.00	0.0250
Void Area	13.17	0.002
Blanketed Area	0.0	0.0



TABLE III (Cont'd)

a. Orbiter Model

MODEL COMPONENT: WING-W<sub>116</sub>

GENERAL DESCRIPTION:

NOTE: Identical to W<sub>116</sub>, except airfoil thickness. Dihedral angle is along trailing edge of wing. Geometric twist = 0.

MODEL SCALE: 0.0125

TEST NO.

DWG. NO. WING-0001401 -000200

DIMENSIONS:

FULL-SCALE

MODEL SCALE

## TOTAL DATA

Area (Theo) Ft<sup>2</sup>

Planform

2690.00

0.420

Span (Theo) In.

936.68

11.709

Aspect Ratio

2.265

2.265

Rate of Taper

1.177

1.177

Taper Ratio

0.200

0.200

Dihedral Angle, degrees

3.500

3.500

Incidence Angle, degrees

0.500

0.500

Aerodynamic Twist, degrees

Sweep Back Angles, degrees

Leading Edge

45.00

45.00

Trailing Edge

- 10.056

- 10.056

0.25 Element Line

35.209

35.209

Chords:

Root (Theo) B.P.O.O.

689.24

8.616

Tip, (Theo) B.P.

137.85

1.723

MAC

174.81

5.935

Fus. Sta. of .25 MAC

1136.83

14.210

W.P. of .25 MAC

290.58

3.632

B.L. of .25 MAC

182.13

2.277

## EXPOSED DATA

Area (Theo) Ft<sup>2</sup>

1751.50

0.274

Span, (Theo) In. BP108

720.68

9.009

Aspect Ratio

2.059

2.059

Taper Ratio

0.245

0.245

Chords

Root BP108

562.09

7.026

Tip 1.00 b

137.85

1.723

MAC

392.83

4.910

Fus. Sta. of .25 MAC

1185.98

14.825

W.P. of .25 MAC

294.30

3.679

B.L. of .25 MAC

251.77

3.147

Airfoil Section (Rockwell Mod NASA)

XXXX-64

Root  $\frac{b}{2}$  =

0.113

0.113

Tip  $\frac{b}{2}$  =

0.120

0.120

Data for (1) of (2) Sides

Leading Edge Cuff

Planform Area Ft<sup>2</sup>

113.13

0.0177

Leading Edge Intersects Fus M. L. @ Sta

500.0

6.250

Leading Edge Intersects Wing @ Sta

1024.0

12.800

TABLE III (Cont'd)

## a. Orbiter Model

MODEL COMPONENT : ORBITER TAILCONE - TC<sub>1</sub>GENERAL DESCRIPTION : Pairing mounted on orbiter fuselage base for ferry missions configuration.MODEL SCALE: 0.0125DRAWING NUMBER : SS-A01452

## DIMENSIONS :

	FULL SCALE	MODEL SCALE
Length	<u>435.76</u>	<u>5.447</u>
Max Width	<u>300.80</u>	<u>3.76</u>
Max <del>Depth</del> Height	<u>266.40</u>	<u>3.33</u>
Fineness Ratio	<u>          </u>	<u>          </u>
Area - Ft <sup>2</sup>	<u>          </u>	<u>          </u>
Max. Cross-Sectional	<u>462.37</u>	<u>0.0722</u>
Planform	<u>635.803</u>	<u>0.0993</u>
Wetted	<u>          </u>	<u>          </u>
Base	<u>          </u>	<u>          </u>

TABLE III (Cont'd)

## b. Carrier Model

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>96</sub>GENERAL DESCRIPTION: Forward attach structure between the Orbiter and Carrier, faired struts,  $i_0 = 4^\circ$ 

MODEL SCALE: 0.0125

DRAWING NO.: Boeing Dwg. 747-MD-654, SS-A01559-4, -18, -35

## DIMENSIONS:

		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
$i_0$ , Incidence angle, deg. (Orbiter FRL to 747 FRL)		4.0	4.0
Fairing chord, right and left, In.		31.0	0.388
Fairing T/C		0.226	0.226
Carrier attach points, In.	BSTA	689.4	8.617
	BWL	372.0	4.650
	BL	66.3	0.829
Orbiter attach points, In.	$X_0$	388.15	4.852
	$Z_0$	283.11	3.539
	Y	0.0	0.0
	BSTA	681.52	8.519
	BWL	480.4	6.005

TABLE III (Cont'd)

## b. Carrier Model

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>97</sub>GENERAL DESCRIPTION: Forward attach structure between the Orbiter and Carrier, faired struct,  $i_0 = 6^\circ$ 

MODEL SCALE: 0.0125

DRAWING NO.: Boeing Dwg 747-MD-654, SS-A0159-3, -11, -35

## DIMENSIONS:

		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
$i_0$ , Incidence angle, deg. (Orbiter FRL to 747 FRL)		6.0	6.0
Fairing chord, right and left, In.		31.0	0.388
Fairing t/c		0.226	0.226
Carrier attach points, In.	BSTA	689.4	8.617
	BWL	372.0	4.650
	BL	66.3	0.829
Orbiter attach point, In.	$X_0$	388.15	4.852
	$Z_0$	283.11	3.539
	$Y_0$	0.0	0.0
	BSTA	684.88	8.561
	BWL	512.72	6.409

TABLE III (Cont'd)

## b. Carrier Model

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>98</sub>GENERAL DESCRIPTION: Forward attach structure between the Orbiter and Carrier, faired struts,  $i_0 = 8^\circ$ 

MODEL SCALE: 0.0125

DRAWING NO.: Boeing Dwg 747-MD-654, SS-A01559-5, -19, -35

DIMENSIONS:		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
$i_0$ , Incidence angle, deg. (Orbiter FRL to 747 FRL)		8.0	8.0
Fairing chord, right and left, In.		31.0	0.388
Fairing t/c		0.226	0.226
Carrier attach points, In.	BSTA	689.4	8.617
	BWL	372.0	4.650
	BL	66.3	0.829
Orbiter attach points, In.	$X_0$	388.15	4.852
	$Z_0$	283.11	3.539
	$Y_0$	0.0	0.0
	BSTA	689.4	8.617
	BWL	544.72	6.809

TABLE III (Cont'd)

## b.. Carrier Model

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>99</sub>

GENERAL DESCRIPTION: Aft attach structure between orbiter and carrier, same as AT<sub>95</sub> with a single fairing covering the main strut and drag strut on each side, and a fairing on the sway brace.

MODEL SCALE: 0.0125

DRAWING NO.: Boeing Dwg 747-MD-658, W-1135A-11, -12, SS-A01559-33, -34, -35

## DIMENSIONS:

		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Orbiter attach points, In.	X <sub>O</sub>	1317.0	16.462
	Y <sub>O</sub>	± 96.51	± 1.206
	Z , BL	267.5	3.344
	BSTA	1607.0	20.087
	BWL	400.0	5.000
Main fairing:			
Root chord, In.		250.0	3.125
T/c of root chord		0.09	0.09
Tip chord, In.		120.0	1.500
T/c of tip chord		0.14	0.14
Sway brace:			
Chord, In.		31.0	0.388
T/c		0.226	0.226

TABLE III (Cont'd)

MODEL COMPONENT : Body - b. Carrier Model  
27.8

GENERAL DESCRIPTION : Body 74-7 Project with A.P.V.

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MODEL SCALE: 0.0125 MODEL DWG: 1318I-1

DRAWING NUMBER : 65013609, 1318-54

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length , In.	<u>2702.0</u>	<u>33.78</u>
Max Width , In.	<u>255.3</u>	<u>3.19</u>
Max Depth	<u>          </u>	<u>          </u>
Fineness Ratio	<u>9.73</u>	<u>9.73</u>
Area - Ft <sup>2</sup>	<u>          </u>	<u>          </u>
Max. Cross-Sectional	<u>          </u>	<u>          </u>
Planform	<u>          </u>	<u>          </u>
Wetted	<u>14.093</u>	<u>0.002</u>
Base	<u>          </u>	<u>          </u>

TABLE III (Cont'd)

## b. Carrier Model

MODEL COMPONENT: WING - W<sub>44.1</sub>

GENERAL DESCRIPTION: Sweet 747 wing

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

DRAWING NO.: 65C13609, 1318-46

## DIMENSIONS:

FULL SCALE   MODEL SCALE

## Total Data:

Area (Theo.), Ft<sup>2</sup>

Planform

5500.00   0.860

Span (Theo.), In.

2348.0   29.35

Aspect ratio

6.96   6.96

Incidence angle, deg.

7.0   7.0

Chords, In.:

MAC

327.8   4.10

Fus. sta. of 0.25 MAC

1339.87   16.75

W.P. of 0.25 MAC

190.42   2.38



TABLE III (Cont'd)

## b. Carrier Model

MODEL COMPONENT: VERTICAL -  $V_{9.1}$ 

GENERAL DESCRIPTION: Swept vertical tail

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

DRAWING NO.: 65C13609, 1318-8

## DIMENSIONS:

FULL SCALEMODEL SCALE

## TOTAL DATA

Area (Theo), $\text{Ft}^2$	630.0	0.098
Span (Theo), In.	386.5	4.830
Sweepback angles, deg., L.E.	50.12	50.12
Aspect ratio	1.25	1.25
Chord:		
Root (Theo), WP, In.	461.67	5.77
Tip (Theo), WP, In.	157.0	1.96
Mean Aerodynamic Chord, In.	334.16	4.20
Fus. Sta. of 0.25 MAC	2529.6	31.62
W.P. of 0.25 MAC	528.0	6.60

TABLE III (Cont'd)  
b. Carrier Model

MODEL COMPONENT: HORIZONTAL TAIL -  $H_{15}$

GENERAL DESCRIPTION: Sweet 747 horizontal stabilizer

MODEL SCALE: 0.0125

MODEL NO.: 1318I-1

DRAWING NO.: 65C13609, 1318-5

DIMENSIONS:

	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Area (Theo.), $\text{ft}^2$		
Planform	1470.0	0.230
Span (Theo), In.	873.00	10.91
Aspect ratio	3.6	3.6
Chords:		
MAC, In.	271.6	3.40
Fus. Sta. of 0.25 MAC, In.	2563.9	32.05
W.P. of 0.25 MAC, In.	175.0	2.19
Sweepback angle of 0.25 MAC, deg.	37.5	37.5

TABLE III (Cont'd)  
b. Carrier Model

MODEL COMPONENT: HORIZONTAL TAIL - H<sub>15.6</sub>

GENERAL DESCRIPTION: Horizontal tail, H<sub>15</sub>, with vertical fins on each  
tip at body B.L. 427.3

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

DRAWING NO.: 65C13609, 1318-5, 1318-70

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Fin Exposed Data (one side):		
Area = Ft <sup>2</sup>	200.0	0.0312
Span, In.	252.0	3.15
Chord, In.	113.6	1.42

TABLE III (Cont'd)  
b. Carrier Model

MODEL COMPONENT:  $M_{25}$

GENERAL DESCRIPTION: Inboard 747, JT9D nacelle strut

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

DRAWING NO.: 65C13609, 1318-60

DIMENSIONS:

	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Wing B.L. of nacelle $C_L$ , In.	470.0	5.875
Cant angle deg., inboard	2.0	2.0

TABLE III (Cont'd)

b. Carrier Model

MODEL COMPONENT:  $M_{26}$

GENERAL DESCRIPTION: Outboard 747, JT9D

Strut

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

DRAWING NO.: 65C13609, 1318-60

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
W L of $C_L$ , In.	834.0	10.425
Cant angle, deg. inboard	2.0	2.0

TABLE III (Cont'd)

b. Carrier Model

MODEL COMPONENT: U57

GENERAL DESCRIPTION: Inboard fan cowl and primary 747 nacelle, flow-through type.

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

DRAWING NO.: 65C13609, 1318-60

TABLE III (Cont'd)

b. Carrier Model

MODEL COMPONENT: N<sub>58</sub>

MODEL DESCRIPTION: Outboard fan cowl and primary 747 nacelle, flow-through type.

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

DRAWING NO.: 65C13609, 1318-60

TABLE III (Cont'd)

## b. Carrier Model

MODEL COMPONENT: SPOILERS -  $S_{1-12}$ 

GENERAL DESCRIPTION: Multi-panel flight spoilers. Four outboard and two inboard spoilers per side. Subscript denotes spoiler panel  $S_1$  is the most outboard L.H. panel and  $S_{12}$  is most outboard R.H. panel.

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

DRAWING NO.: 65C13609, 1318-56

## DIMENSIONS: (ONE PANEL)

	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Outboard $S_{1-4}$ and $S_{9-12}$ ( $\text{Ft}^2$ )	21.48	0.0034
Span (equivalent), In.	75.00	0.94
Chord, In.	41.28	0.52
Inboard, $S_{5-6}$ and $S_{7-8}$ ( $\text{Ft}^2$ )	35.31	0.0055
Span (equivalent), In.	90.00	1.130
Chord, In.	56.52	0.71



TABLE III. (Continued)

b. Carrier Model

MODEL COMPONENT:  $T_{14}$

GENERAL DESCRIPTION: Flap track fairings, four on each side

MODEL SCALE: 0.0125

DRAWING NO.: 65C13609, 1318-67

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
WBL of Track No. 1, In.	235.3	2.94
2, In.	353.0	4.41
3, In.	585.0	7.31
4, In.	743.6	9.30
Distance from wing		
Trailing edge to:		
Track trailing edge, In.	44.0	0.55

TABLE III. Concluded.

MODEL COMPONENT : Mounting Strut - S<sub>1</sub>

GENERAL DESCRIPTION : Blade strut attachment to orbiter aft upper fuselage where vertical tail is normally mounted. Strut leading edge and lower trailing edge conform to the vertical tail planform. Airfoil section is blunted diamond. The tip of the strut mounts to a sting.

MODEL SCALE: 0.0125

DRAWING NUMBER: Rockwell W-11335H

## DIMENSIONS :

## MODEL SCALE

Theoretical intersection of L.E.  
with fuselage ML, in.

 $X_0$ 15.973 $Z_0$ 6.250

Leading edge sweep angle, deg.

45.0

Trailing edge sweep angle, deg.

45.0

chord length, in.

2.38

maximum thickness, in.

0.52

distance from L.E. to maximum  
thickness, in.

1.42

position of sting  $\zeta$ , in.  $Z_0$

12.835

TABLE IV.  
CA23B DATASET DESCRIPTION  
(INTERPOLATED/INCREMENTED DATASETS)

DATASET TYPE	DESCRIPTION
RNHXXX	Stability axis coefficient data for 747 carrier.
ANHXXX	Body axis coefficient data for 747 carrier.
BNHXXX	Pressure coefficient data for 747 carrier.
CNHXXX	Stability axis coefficient data for Orbiter.
DNHXXX	Body axis coefficient data for Orbiter.
ENHXXX	Pressure coefficient data for Orbiter.
UNH*XX	Interpolated data for 747 carrier.
VNH*XX	Interpolated data for Orbiter ( $\alpha_c$ 2nd indep. var.)
ZNH*XX	Interpolated data for Orbiter ( $\alpha_o$ 2nd indep. var.)
PNH*XX	Incremental proximity effects data for 747 carrier.
TNH*XX	Incremental proximity effects for Orbiter. ( $\alpha_o$ 2nd indep. var.)
4NH*XX	Incremental proximity effects for Orbiter. ( $\alpha_c$ 2nd indep. var.)

- \* 0 = IORB interpolation
- X = IORB and DX interpolation
- Y = IORB and DY interpolation
- M = MACH interpolation

TABLE V.

## CA23B COEFFICIENT SCHEDULE

Dataset Type	Dataset Sequence	1st ID.	2nd ID.	COEFFICIENTS									
				1	2	3	4	5	6	7	8	9	10
RNHXXX	004-005	DZ	ALPHAC	MACH	CL	CD	CLM	CY	CYN	CBL			
	008-025,027-042			MACH	ALPHAO	DX	DY	CL	CD	CLM	CY	CYN	CBL
ANHXXX	004-005			BETAC	PHIC	CA	CN	CSL	CLN				
	008-025,027-042			BETAC	BETAO	PHIC	PHIO	CA	CN	CSL	CLN		
BNHXXX	004-005			XZCP	XYCP	CPCC	CPSB1	CPSB2					
	008-025,027-042			XZCP	XYCP	CPCC	CPSB1	CPSB2					
CNHXXX	008-025,027-042			MACH	ALPHAO	DX	DY	CL	CD	CLM	CY	CYN	CBL
	008-025,027-042			MACH	CL	CD	CLM	CY	CYN	CBL			
DNHXXX	043-046			MACH	CL	CD	CLM	CY	CYN	CBL			
	047-048			MACH	CL	CD	CLM	CY	CYN	CBL			
ENHXXX	008-025,027-042			BETAC	BETAO	PHIC	PHIO	CA	CN	CSL	CLN		
	043-046			BETAO	PHIO	CA	CN	CSL	CLN				
UNHXXX	047-048			BETAO	PHIO	CA	CN	CSL	CLN	DZ			
	008-025,027-042			XZCP	XYCP	CPC	CPB1	CPB2	CPB3	CPE3	CPS1	CPS2	
UNHXXX	043-046			XZCP	XYCP	CPC	CPB1	CPB2	CPB3	CPE3	CPS1	CPS2	
	047-048			XZCP	XYCP	CPC	CPB1	CPB2	CPB3	CPE3	CPS1	CPS2	
UNHXXX	008-011,013			XZCP	XYCP	CPC	CPB1	CPB2	CPB3	CPE3	CPS1	CPS2	
	020-025,027			IOCB	MACH	DX	DY	CL	CD	CLM	CY	CYN	CBL
UNHXXX	034-035,040												
	010,013-017												
UNHXXX	027-031,034												
	010,013,018-019												
UNHXXX	027, 032-034												
	040-042												

TABLE V.  
CA23B COEFFICIENT SCHEDULE (Continued)

Dataset Type	Dataset Sequence	1st ID.	2nd ID.	COEFFICIENTS									
				1	2	3	4	5	6	7	8	9	10
VNH0XX	008-011,013	DZ	ALPHAC	IORB	MACH	DX	DY	CL	CD	CLM	CY	CYN	CBL
	020-025,027												
	034-035,040												
VNHXX	010,013-017												
	027-031,034												
	010,013,018-019												
VNHXX	027,032-034												
	040-042												
	008-011,013		ALPHA0		ALPHAC								
ZNH0XX	020-025,027												
	034-040												
	010,013-017												
ZNHXX	027-031,034												
	010,013,018-019												
	027,032-034												
ZNHMX	040-042												
	008-011,013		ALPHAC	DCL	DCD	DCLM	DCY	DCYN	DCBL				
	020-025,027												
PNH0XX	034-040												
	010,013-017												
	027-031,034												
PNHYX	010,013,018-019												
	027,032-034												

TABLE V.  
CA23B COEFFICIENT SCHEDULE (Concluded)

Dataset Type	Dataset Sequence	1st ID.	2nd ID.	COEFFICIENTS									
				1	2	3	4	5	6	7	8	9	10
TNH0XX	008-011,013	DZ	ALPHA0	DCL	DCD	DCLM	DCY	DCYN	DCBL				
	020-025,027												
	034-040												
TNHXXX	010,013-017												
	027-031,034												
TNHYXX	010,013,018-019												
	027,032-034												
4NH0XX	008-011,013		ALPHAC										
	020-025,027												
	034-040												
4NHXXX	010,013-017												
	027-031,034												
4NHYXX	010,013,018-019												
	027,032-034												

NOTE: IORB = ALPHA0 ( $\alpha_0$ ) - ALPHAC ( $\alpha_c$ )

IORB in parameter block is a nominal value.

ID = independent variable.

0 = IORB interpolation

X = IORB and DX interpolation

Y = IORB and DY interpolation

M = Mach interpolation

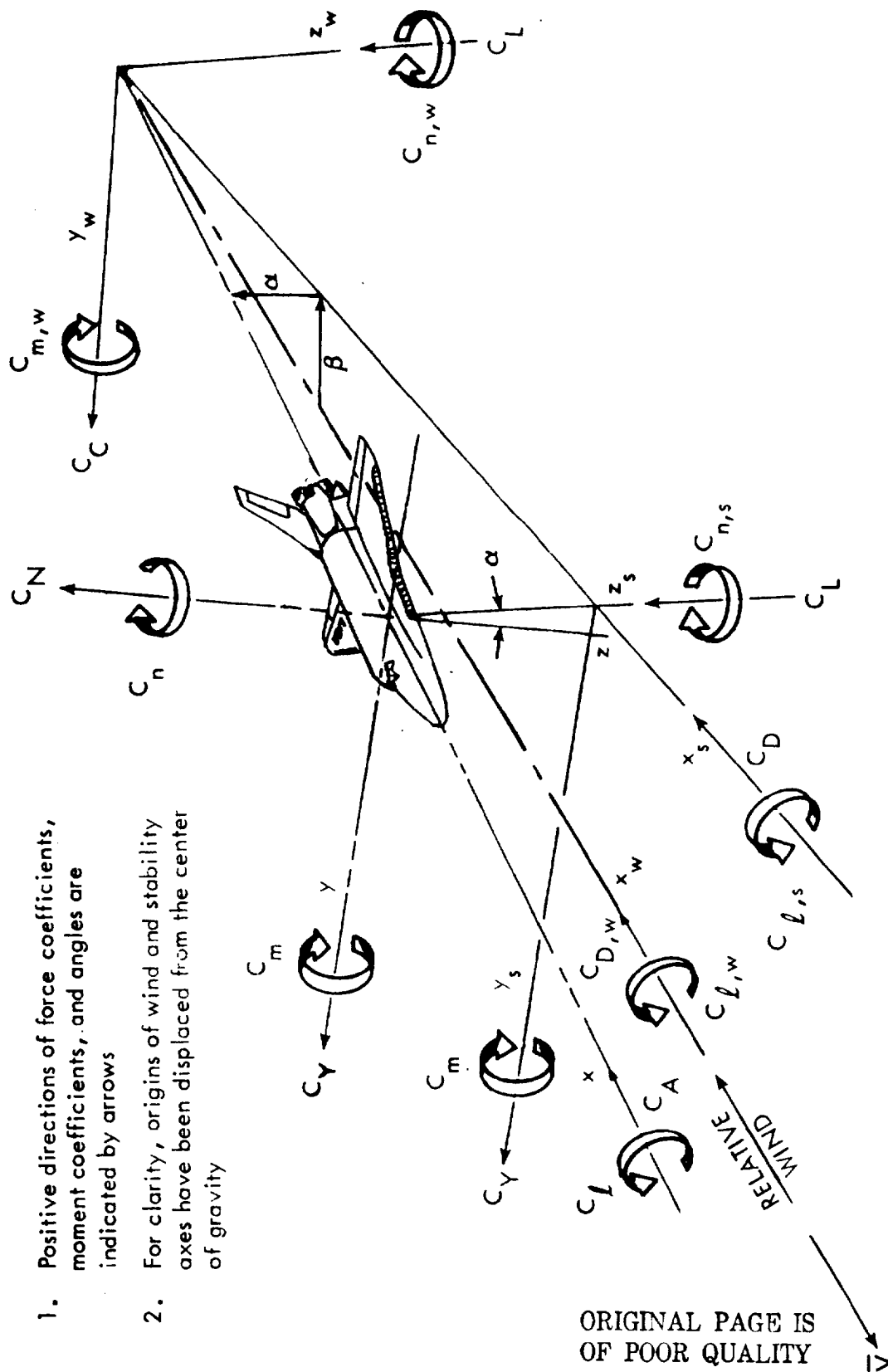
TABLE VI.

INCREMENTAL DATA SET SUMMARY  
(refer to Data Reduction)

$\Delta C747^{(ORB)}$	$C747^{(ORB)}$	$C747^{(ISOL)}$	$\Delta CORB^{(747)}$	$CORB^{(747)}$	$CORB^{(ISOL)}$
PNH008	UNH008	RNH004	TNH008	ZNH008	CNH043
PNH009	UNH009	RNH004	TNH009	ZNH009	CNH043
PNH010	UNH010	RNH005	TNH010	ZNH010	CNH043
PNHX10	UNHX10	RNH005	TNHX10	ZNHX10	CNH043
PNHY10	UNHY10	RNH005	TNHY10	ZNHY10	CNH043
PNH011	UNH011	RNH004	TNH011	ZNH011	CNH043
PNH013	UNH013	RNH005	TNH013	ZNH013	CNH043
PNHX13	UNHX13	RNH005	TNHX13	ZNHX13	CNH043
PNHY13	UNHY13	RNH005	TNHY13	ZNHY13	CNH043
PNHX14	UNHX14	RNH005	TNHX14	ZNHX14	CNH043
PNHX15	UNHX15	RNH005	TNHX15	ZNHX15	CNH043
PNHX16	UNHX16	RNH005	TNHX16	ZNHX16	CNH043
PNHX17	UNHX17	RNH005	TNHX17	ZNHX17	CNH043
PNHY18	UNHY18	RNH005	TNHY18	ZNHY18	CNH043
PNHY19	UNHY19	RNH005	TNHY19	ZNHY19	CNH043
PNH020	UNH020	RNH005	TNH020	ZNH020	CNH046
PNH021	UNH021	RNH004	TNH021	ZNH021	CNH046
PNH022	UNH022	RNH005	TNH022	ZNH022	CNH046
PNH023	UNH023	RNH005	TNH023	ZNH023	CNH046
PNH024	UNH024	RNH004	TNH024	ZNH024	CNH046
PNH025	UNH025	RNH004	TNH025	ZNH025	CNH046
PNH027	UNH027	RNH005	TNH027	ZNH027	CNH045
PNHX27	UNHX27	RNH005	TNHX27	ZNHX27	CNH045
PNHY27	UNHY27	RNH005	TNHY27	ZNHY27	CNH045
PNHX28	UNHX28	RNH005	TNHX28	ZNHX28	CNH045
PNHX29	UNHX29	RNH005	TNHX29	ZNHX29	CNH045
PNHX30	UNHX30	RNH005	TNHX30	ZNHX30	CNH045
PNHX31	UNHX31	RNH005	TNHX31	ZNHX31	CNH045
PNHY32	UNHY32	RNH005	TNHY32	ZNHY32	CNH045
PNHY33	UNHY33	RNH005	TNHY33	ZNHY33	CNH045
PNH034	UNH034	RNH005	TNH034	ZNH034	CNH045
PNHX34	UNHX34	RNH005	TNHX34	ZNHX34	CNH045
PNHY34	UNHY34	RNH005	TNHY34	ZNHY34	CNH045
PNH035	UNH035	RNH005	TNH035	ZNH035	CNH045
PNH036	UNH036	RNH005	TNH036	ZNH036	CNH045
PNH037	UNH037	RNH004	TNH037	ZNH037	CNH045
PNH038	UNH038	RNH005	TNH038	ZNH038	CNH044
PNH039	UNH039	RNH005	TNH039	ZNH039	CNH043
PNH040	UNH040	RNH005	TNH040	ZNH040	CNH043

**Notes:**

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

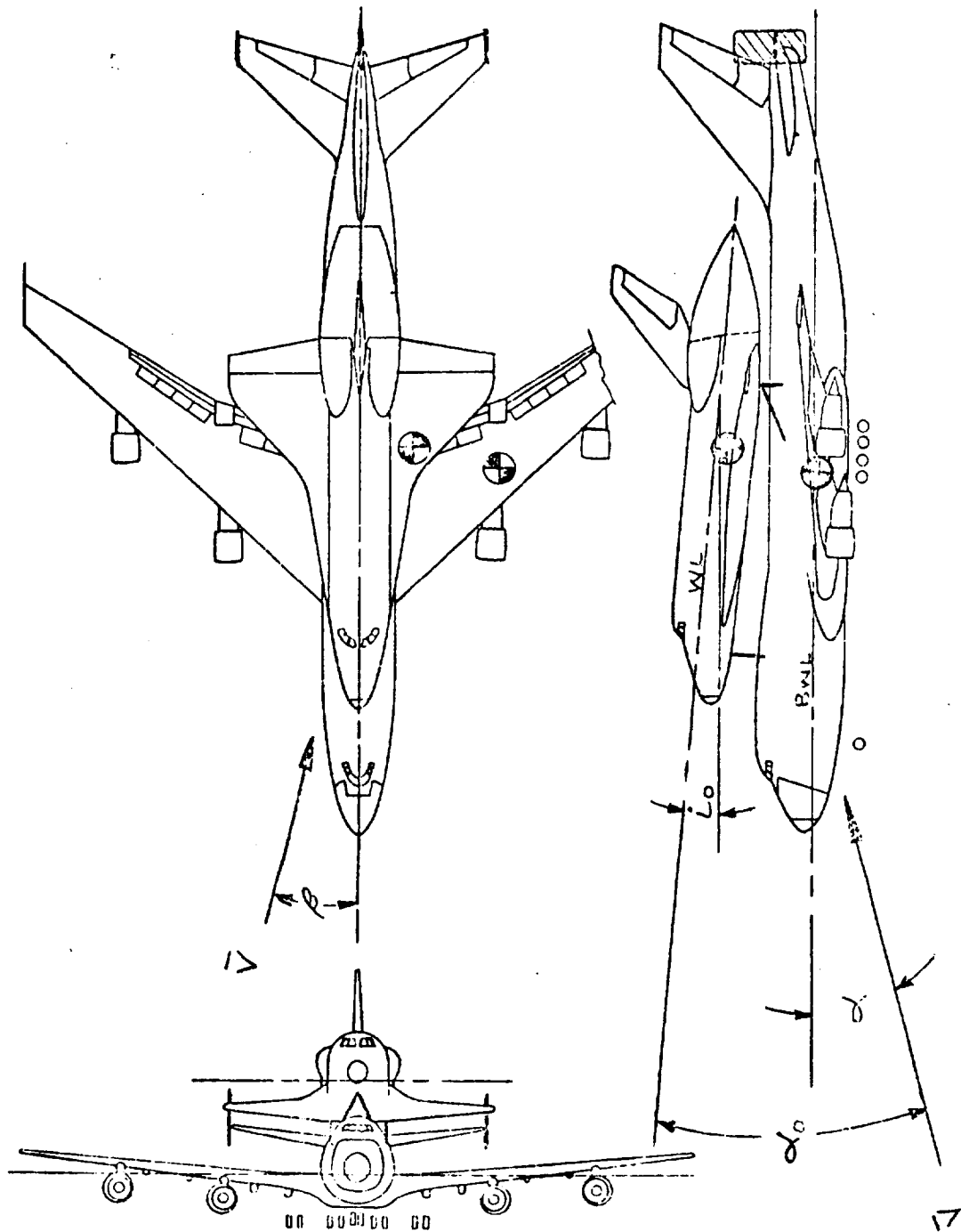


a. Orbiter

Figure 1. - Axis Systems.

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b. Orbiter/747 angular relations

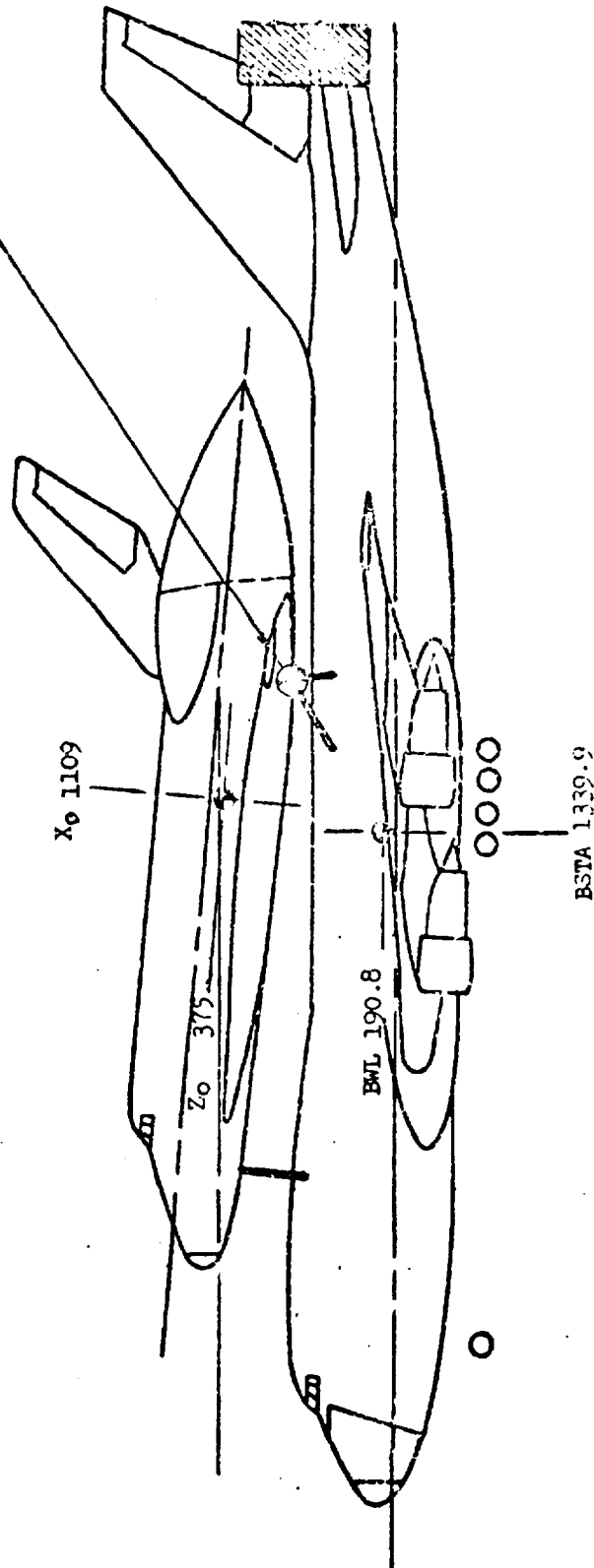
Figure 1. - Concluded.

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REFERENCE DIMENSIONS (FS)

	ORBITER	747 CARRIER
WING AREA $\sim F^2$	2600	5500
MAC ( $\bar{c}$ ) $\sim$ INCHES	474.81	327.78
SPAN (b) $\sim$ INCHES	936.68	2348.04
MOMENT REFERENCE CENTER	57.5% LR	25.0 % C
F.S. $\sim$ INCHES	1109.0	1339.9
W.P. $\sim$ INCHES	375.0	190.8

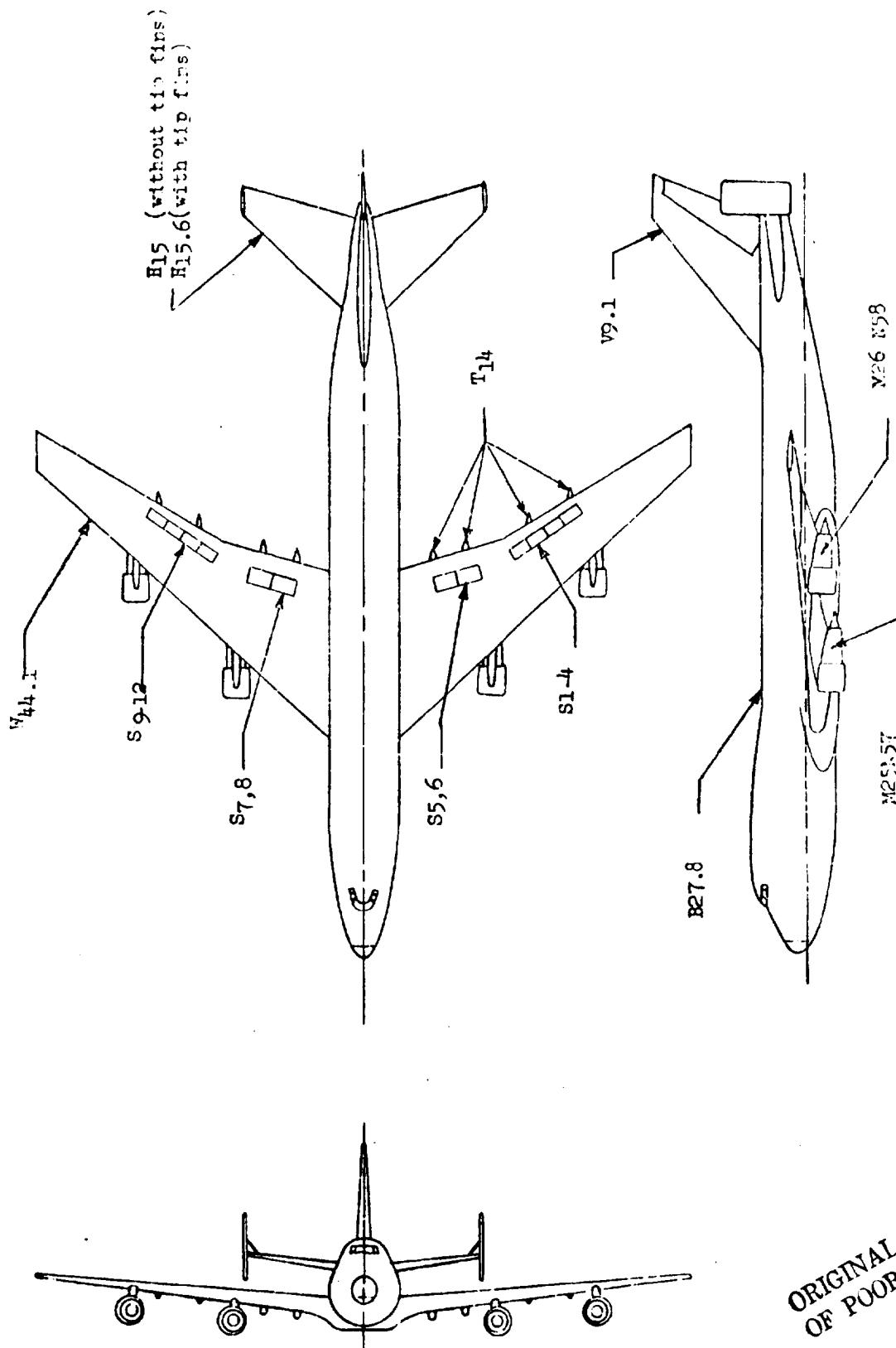
BWL 400  
BSTA 1607  
( $X_0$  96.33)  
( $Z_0$  267.5)  
( $X_0$  131.0)



a. Orbiter/747 flight test configuration reference dimensions

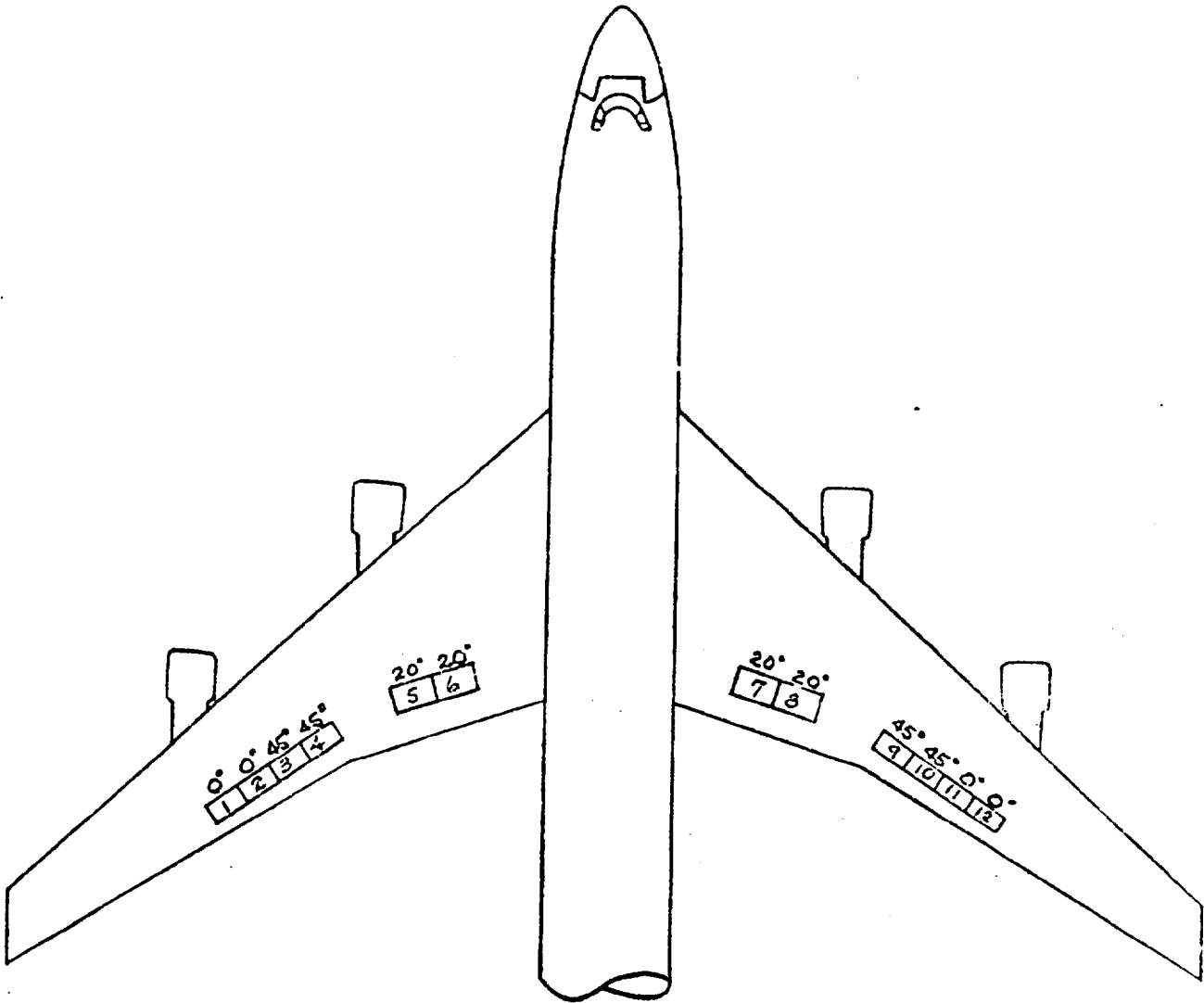
Figure 2. - Model Sketches

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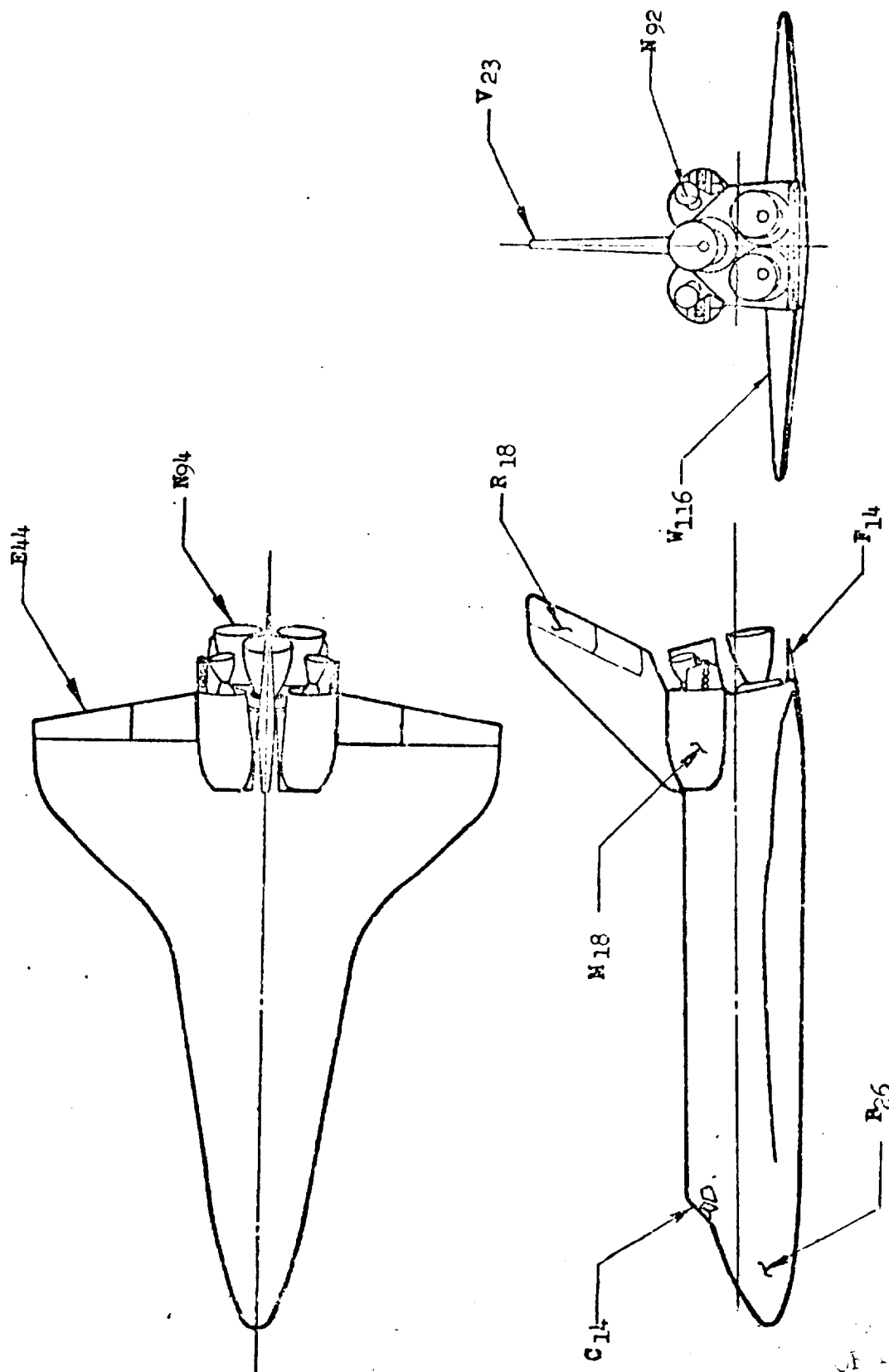
b. 747-100 configuration (Model 1318I-1)  
Figure 2. - Continued.

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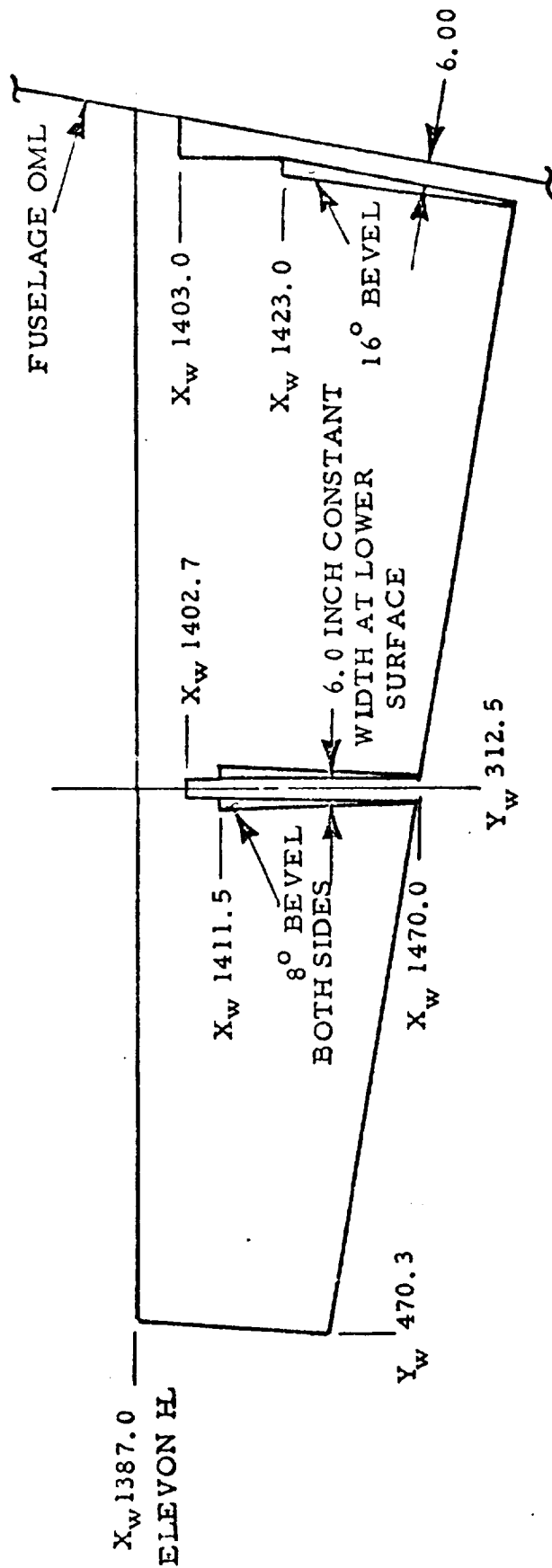
c. In-flight spoiler configuration  
Figure 2. - Continued.



d. SSV Orbiter Configuration (VC70-000002)  
Figure 2. - Continued.

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ON THIS DRAWING

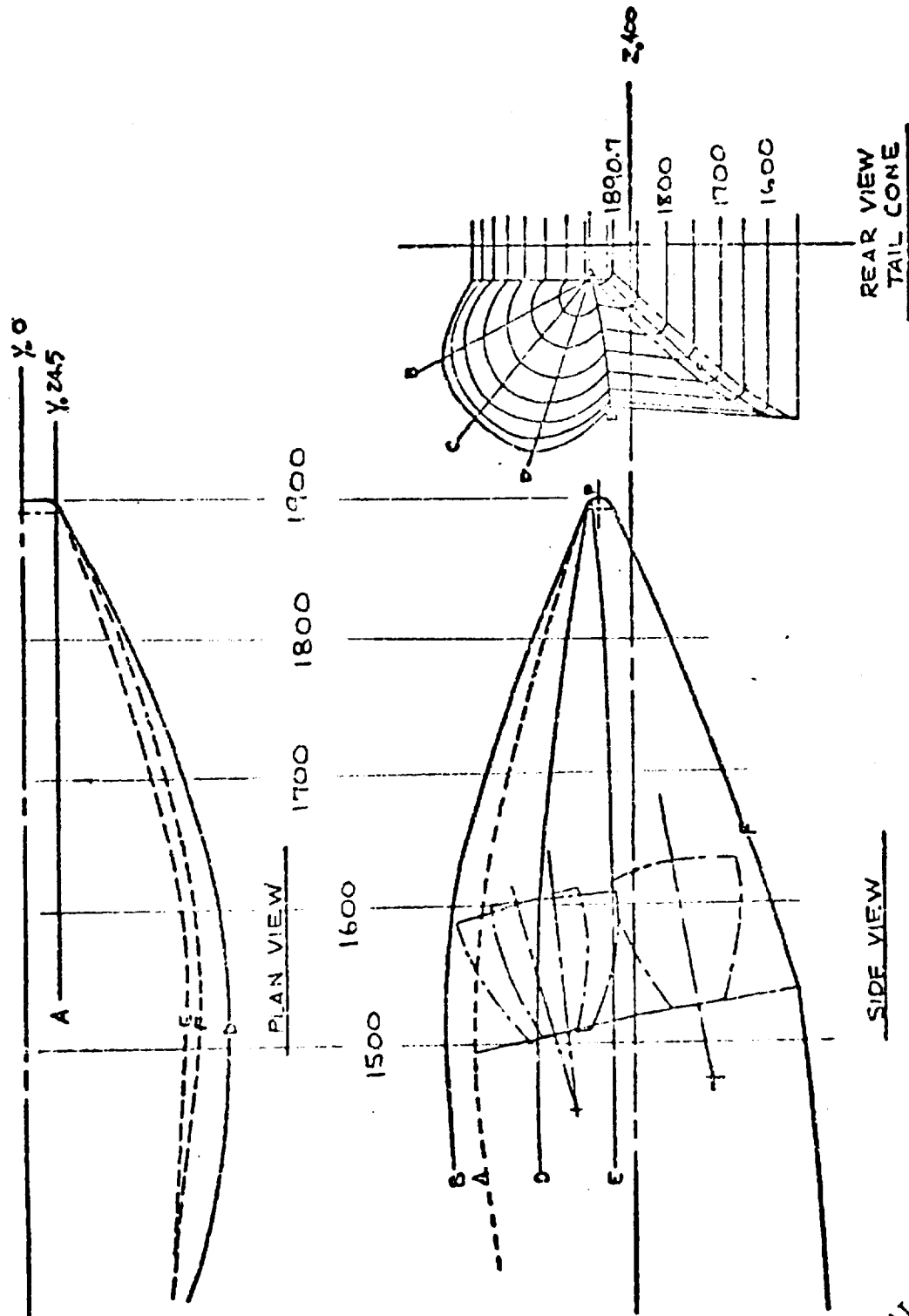
E<sub>44</sub> elevon with 6.0 inch gaps installed. Flipper doors, centerbody pieces, and tip seals are not simulated.



(ALL DIMENSIONS ARE FULL SCALE, INCHES)

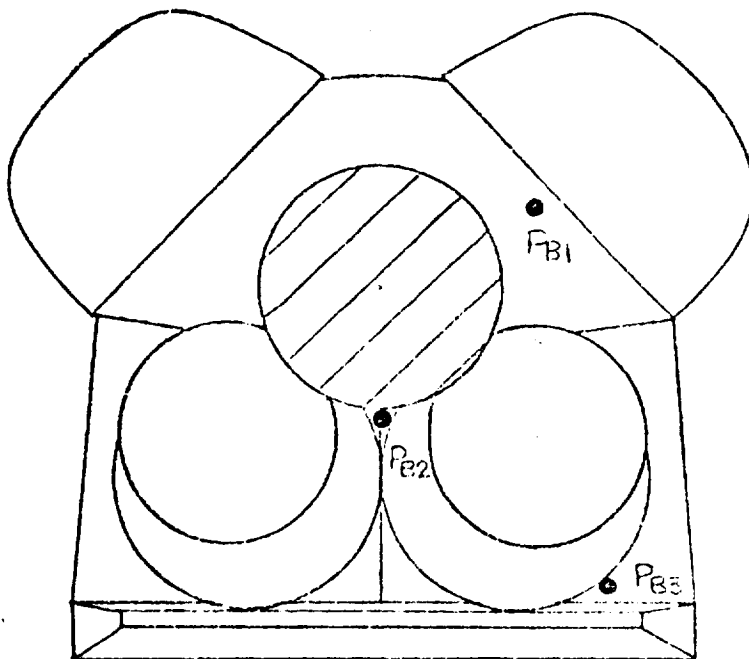
(VIEW IS PERPENDICULAR TO WING  
REFERENCE PLANE)

e. Elevon - E<sub>44</sub>  
Figure 2. - Continued.

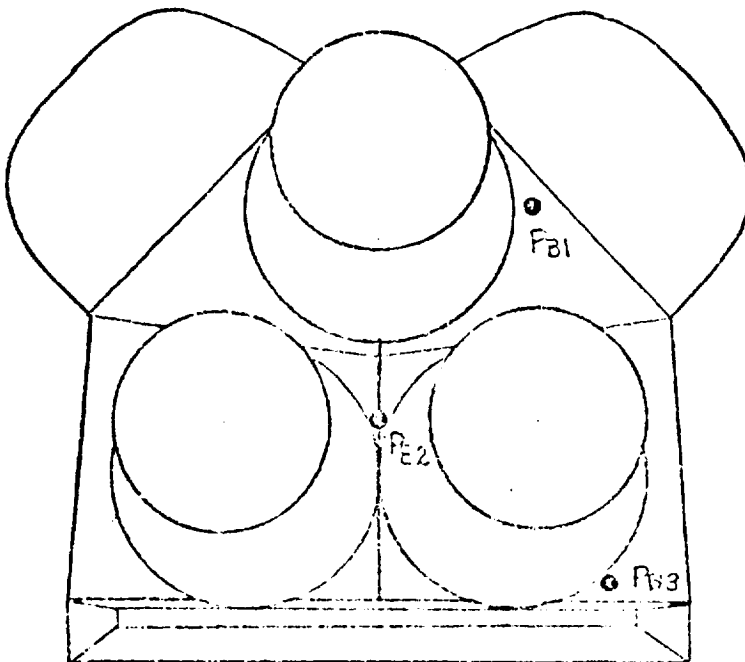


f. Orbiter tail cone TC<sub>4</sub> (X<sub>3B</sub>)  
Figure 2. - Continued.

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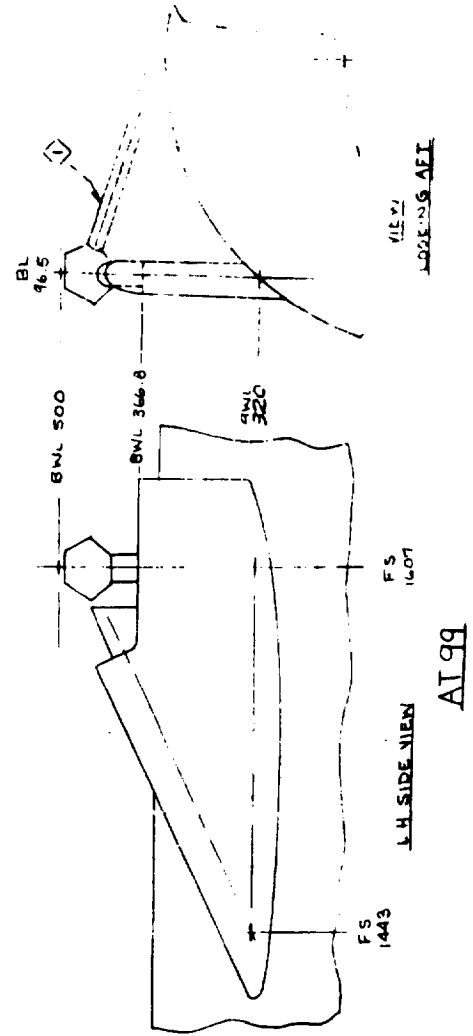
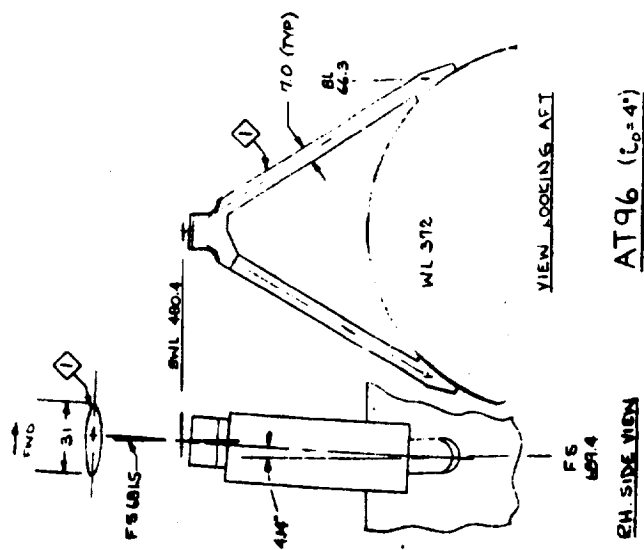
STING MOUNTED



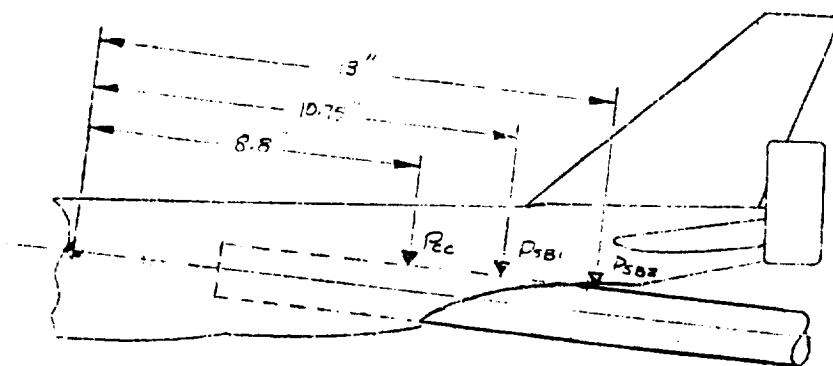
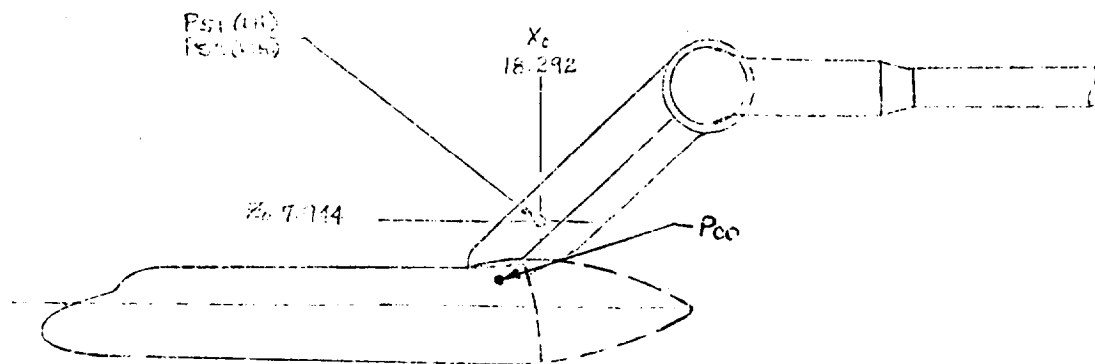
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g. Orbiter base pressure tap locations  
Figure 2. - Continued.





h. Orbiter/747 attach hardware AT96 and AT99  
Figure 2. - Continued.



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- i. 747 sting cavity and orbiter blade strut pressure tap locations  
Figure 2. - Concluded.



a. Orbiter separation sequence  
Figure 3. - Model Installation Photographs.



b. Separation of Orbiter with TC<sub>4</sub> in proximity to 747 carrier

Figure 3. - Continued.



c. Three-quarter rear view showing aft attach fairings on 747 with Orbiter separated

Figure 3. - Continued.



d. Orbiter Without  $TC_h$  in proximity to 747 carrier

Figure 3. - Continued.



e. Front view showing separation rig

Figure 3. - Concluded.

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DATA FIGURES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-1.00(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SO.FT.
(PNH024)	ARC 14-1.00(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800 IN.
(PNH025)	ARC 14-1.00(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	BREF 2348.0400 IN. XC
						YMRP 1339.9000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

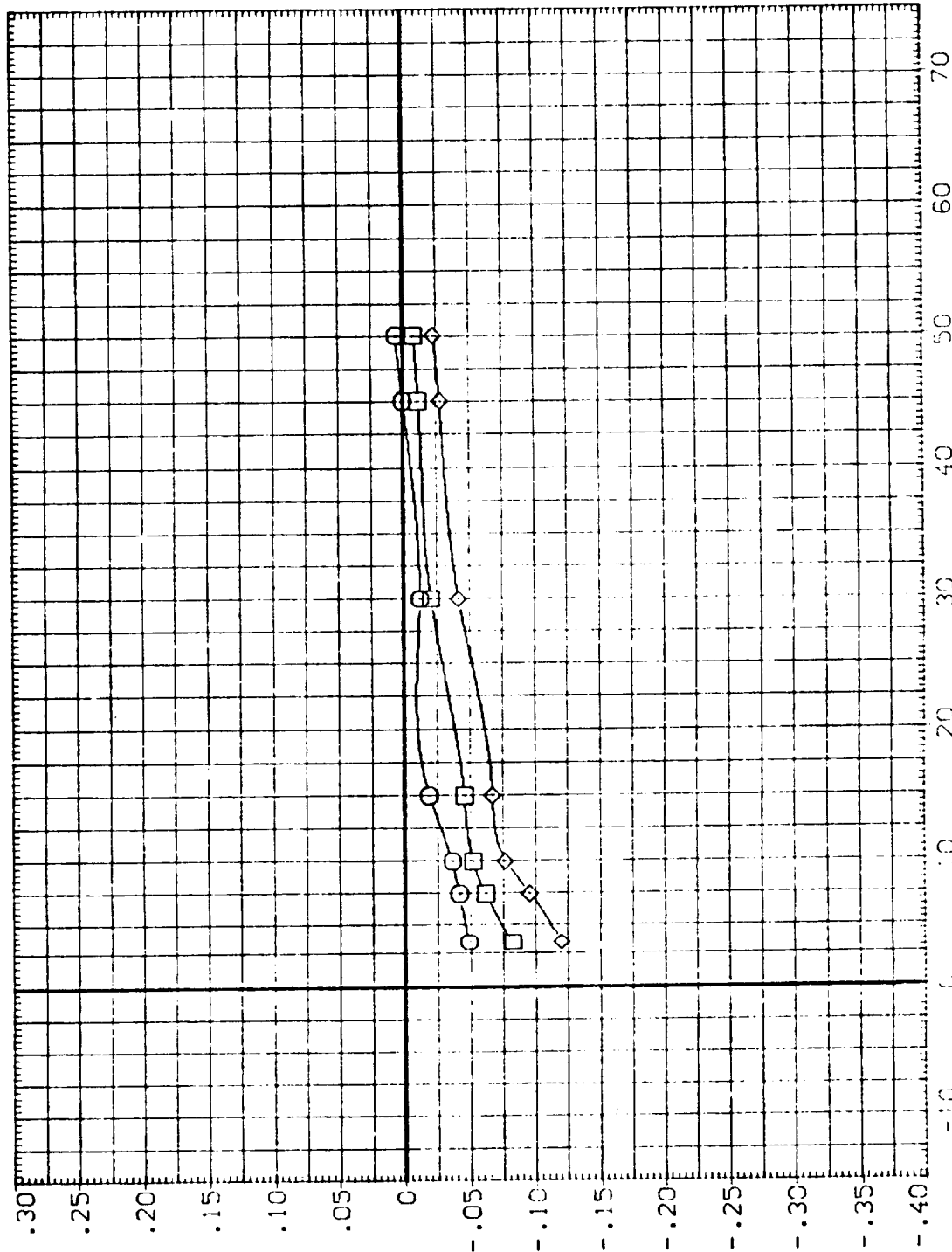


FIG. 4 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)

DATA SET SYMBOL		CONF IGURATION DESCRIPTION		TORB		ELEVON		MACH		STAB		REFERENCE INFORMATION	
(PNH021)	ARC 14-120(CA23B)	747/1	AT1 02S1 (CARRIER DATA)	4.000	.000	-1.000	SREF	5500.0000	SO.FT.				
(PNH024)	ARC 14-120(CA23B)	747/1	AT1 02S1 (CARRIER DATA)	6.000	.000	-1.000	LREF	327.7800	IN.				
(PNH025)	ARC 14-120(CA23B)	747/1	AT1 02S1 (CARRIER DATA)	8.000	.000	-1.000	BREF	2318.0400	IN.				
							XMRP	1339.5000	IN. XC				
							YMRP	.0000	IN. YC				
							ZMRP	190.7500	IN. ZC				
							SCALE	.0125					

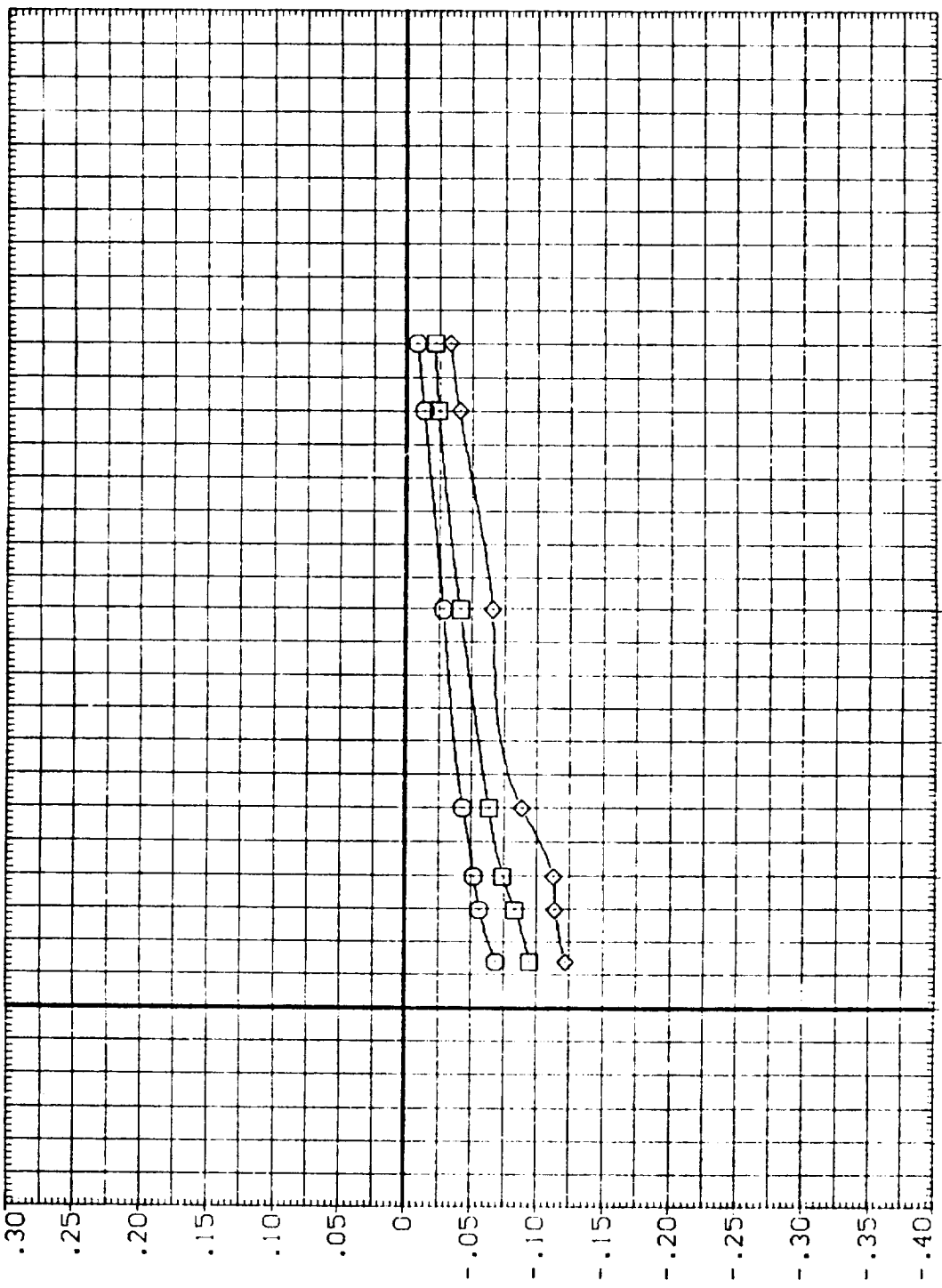


FIG. 4 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
 (B)ALPHAC= 2.00

PAGE 2

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(PN-021)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF	5500.0000 SQ.FT.
(PN-024)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF	327.7800 IN.
(PN-025)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	-1.000	BREF	2348.0400 IN.
						XMRP	1339.9000 IN.
						YMRP	190.7500 IN.
						ZMRP	190.7500 IN.
						SCALE	.0125

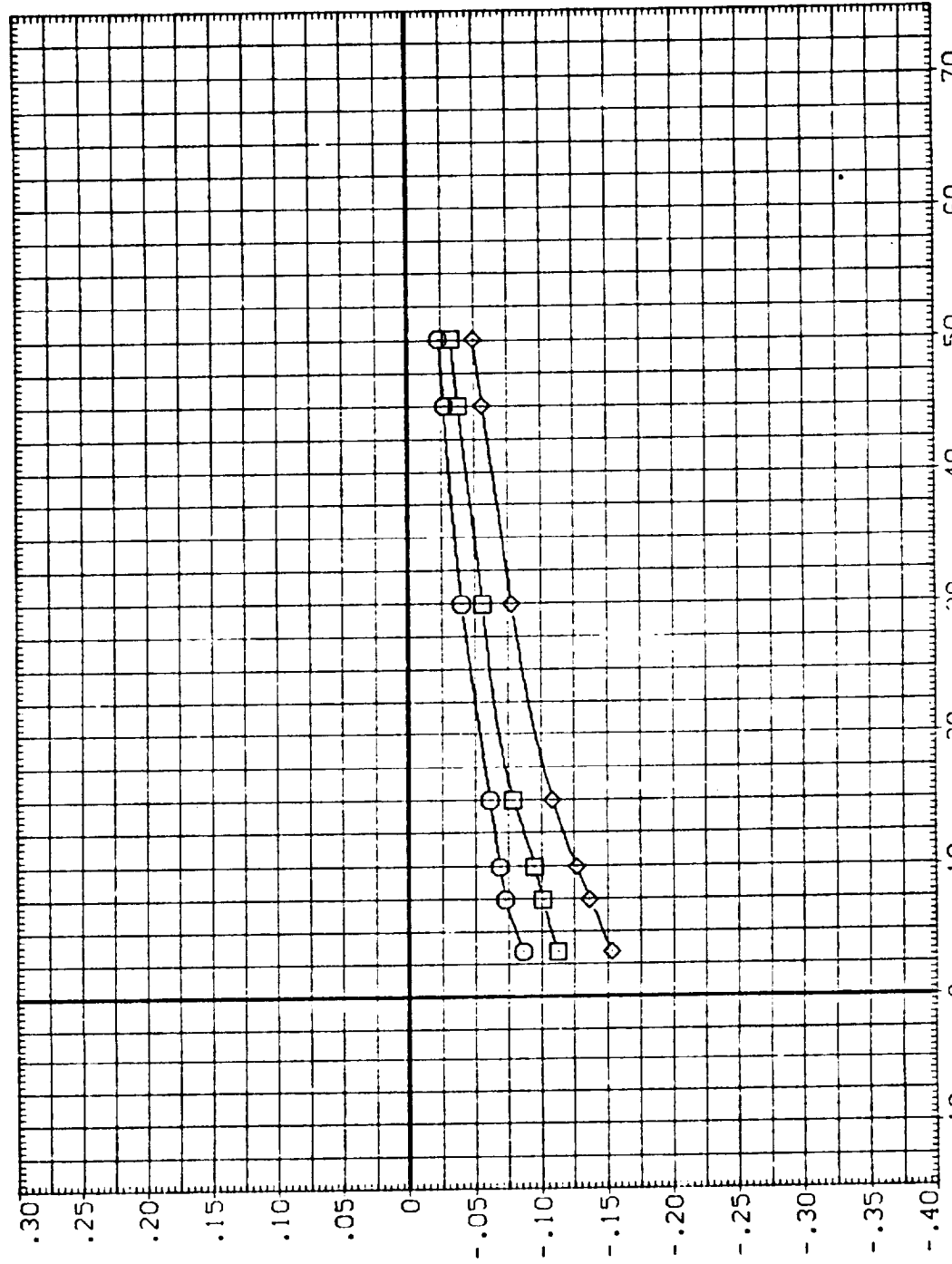


FIG. 4 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)

DATA SET SYMBOL      CONFIGURATION DESCRIPTION      ORB      ELEVON      MACH      STAB      REFERENCE INFORMATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800 IN.
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.500	-1.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

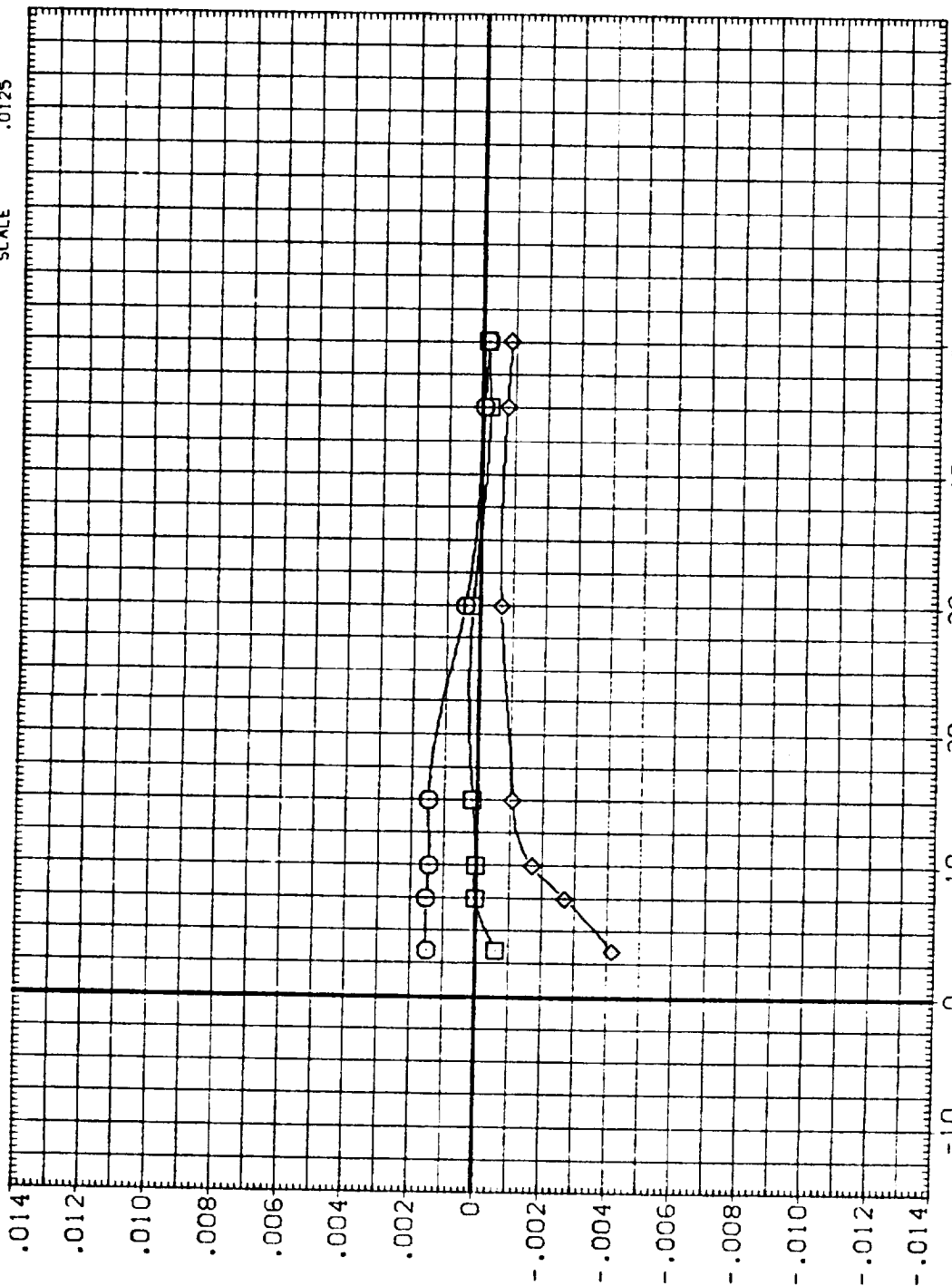


FIG. 4 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800 IN.
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

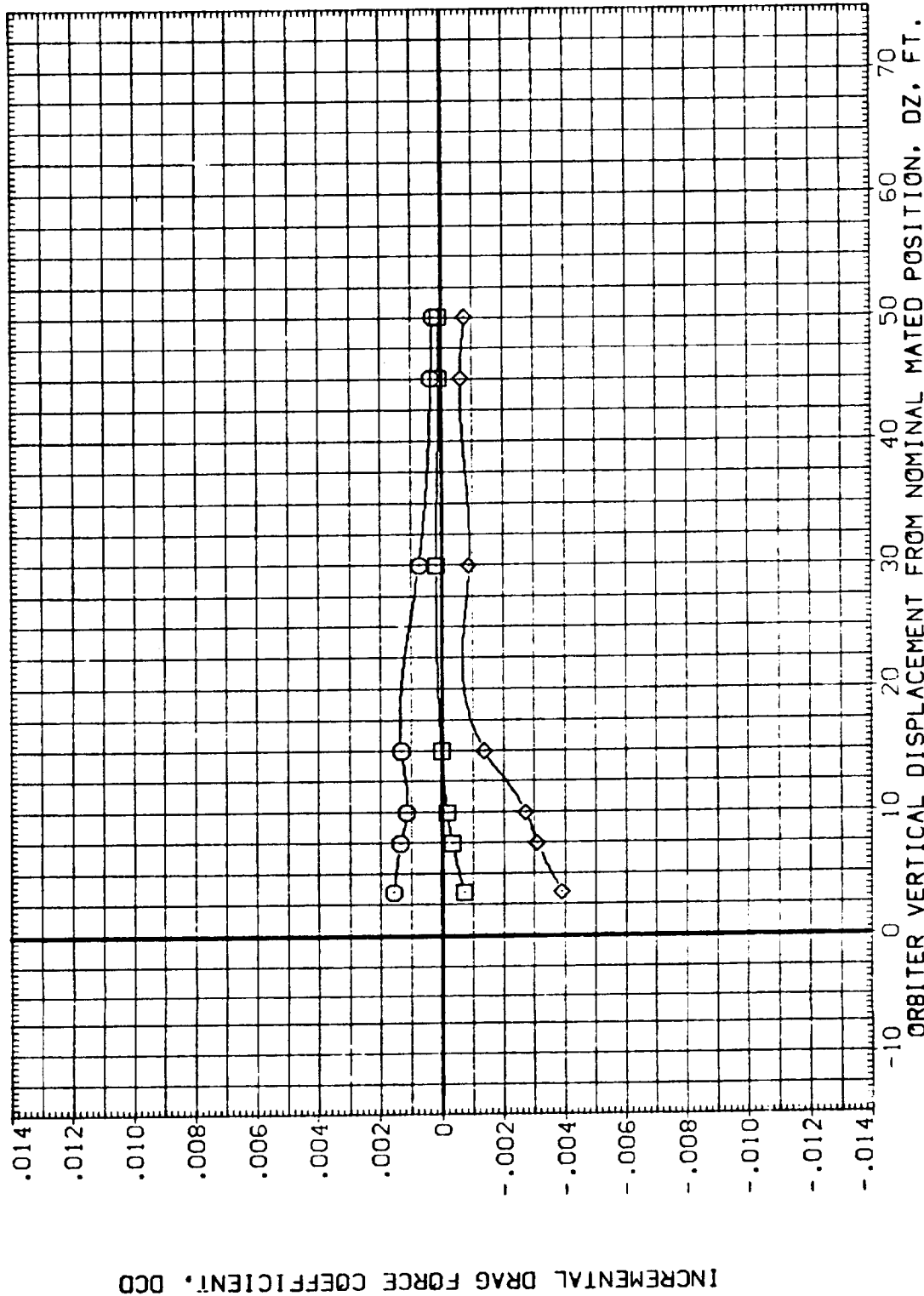


FIG. 4 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
(B)ALPHAC= 2.00 PAGE 5

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL

CONFIGURATION DESCRIPTION

ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)

ORBITER

ELEVON

MACH

STAB

REFERENCE INFORMATION

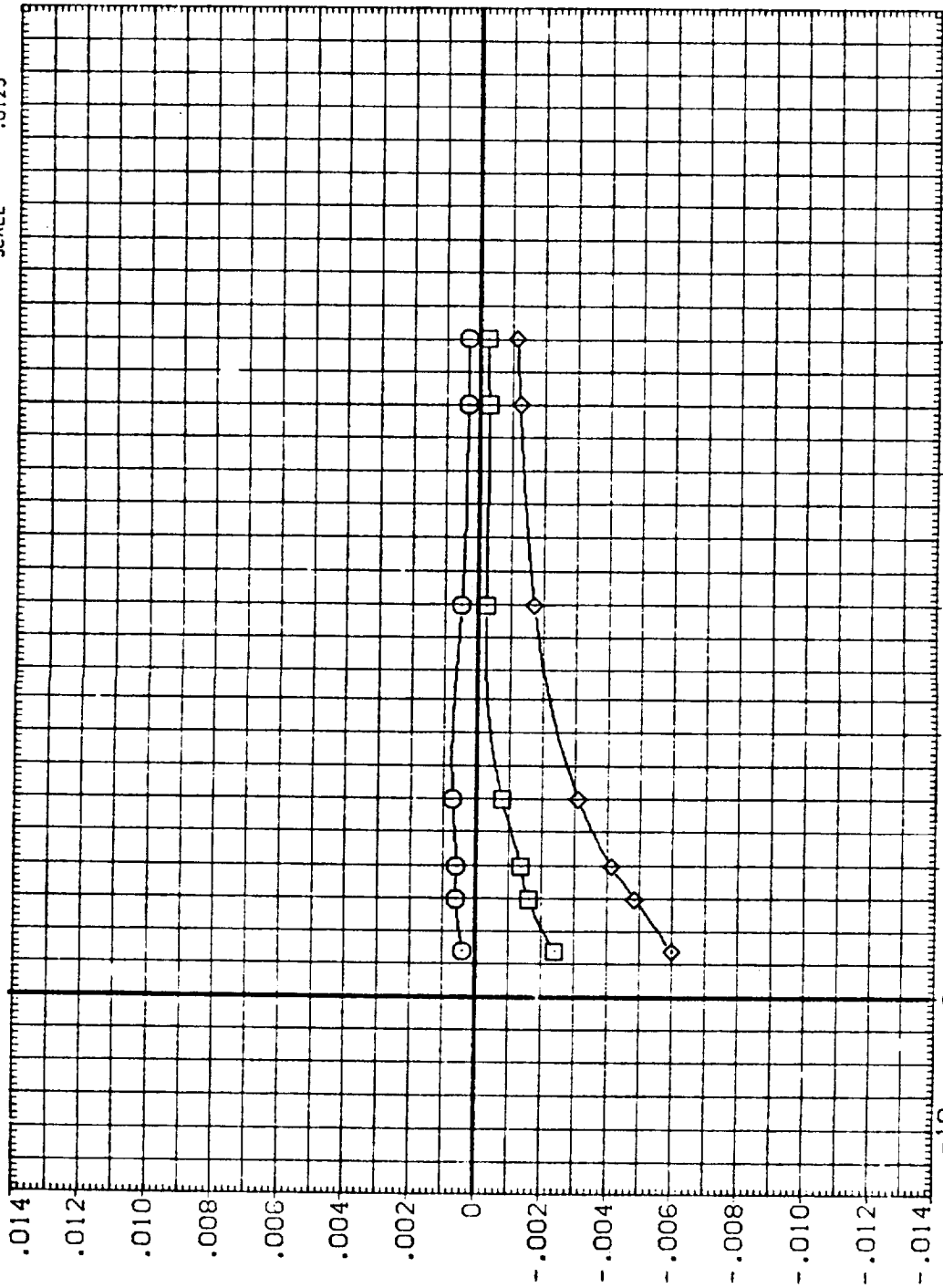


FIG. 4 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
(C)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800 IN.
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	.000	.600	-1.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP 190.7500 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

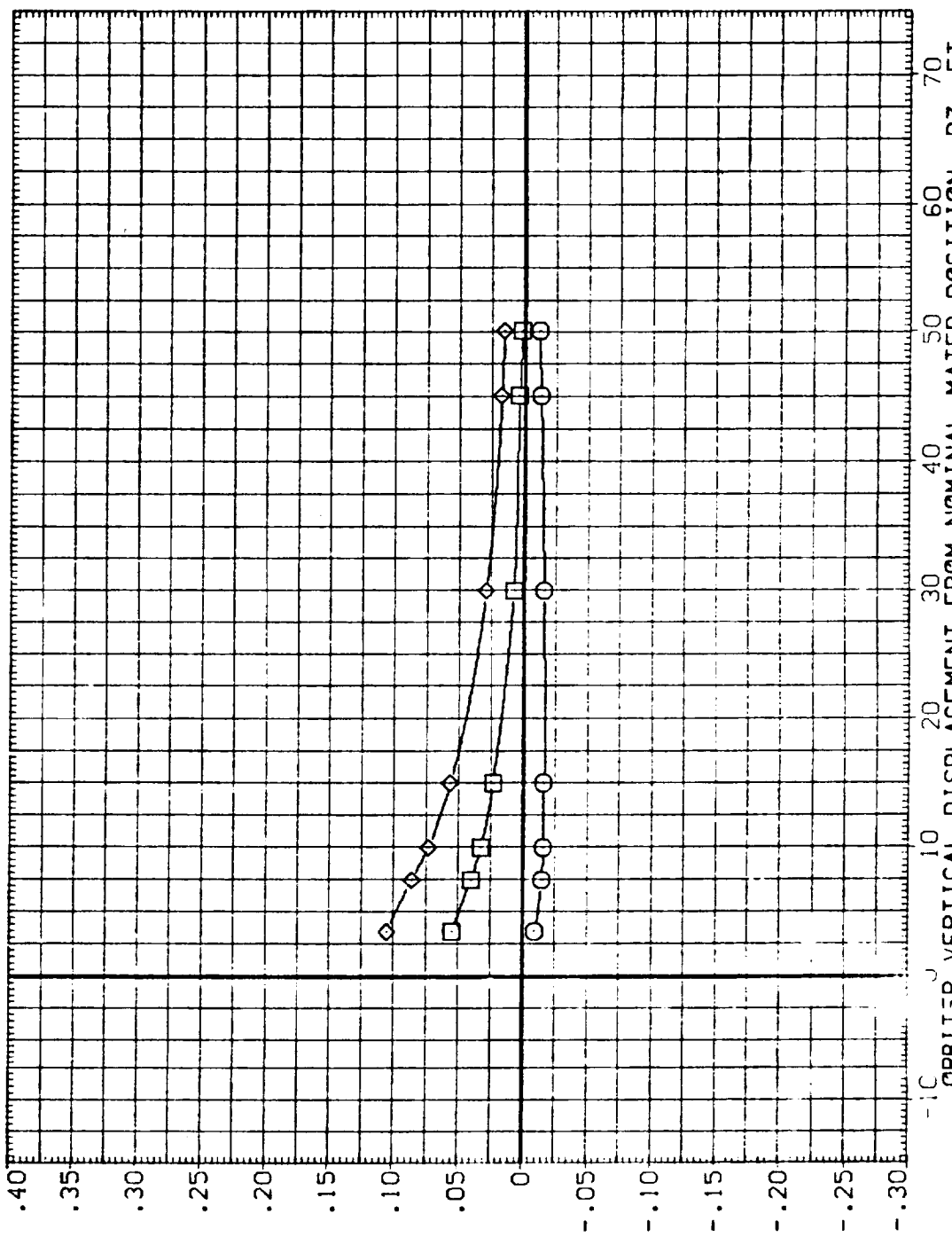


FIG. 4 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
 (A)ALPHAC= .00

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNH021) ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)  
 (PNH024) ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)  
 (PNH025) ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)

ORBITOR ELEVON MACH STAB REFERENCE INFORMATION  
 ORB 4.000 .000 .600 -1.000 SREF 5500.0000 SQ.FT.  
 6.000 .000 .600 -1.000 LREF 327.7800 IN.  
 8.000 .000 .600 -1.000 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

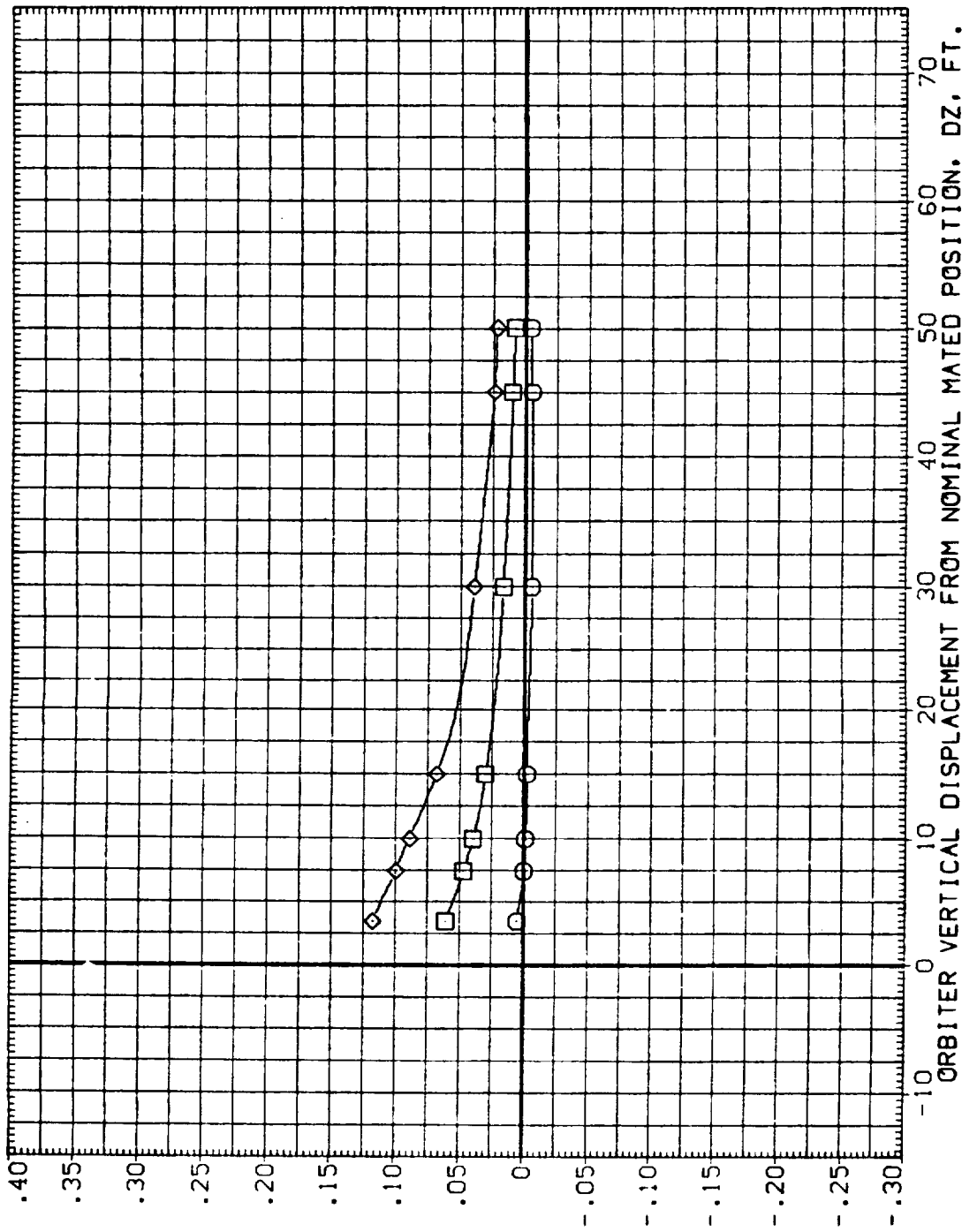


FIG. 4 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG., ORB T/C OFF, ELEVON=0)

(B) ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(PNH021)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF	5500.0000	50. FT.	
(PNH024)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF	327.7800	IN.	
(PNH025)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	BREF	2348.0400	IN.	XC
						XMRP	1339.9000	IN.	YC
						YMRP	.0000	IN.	YC
						ZMRP	190.7500	IN.	ZC
						SCALE	.0125		

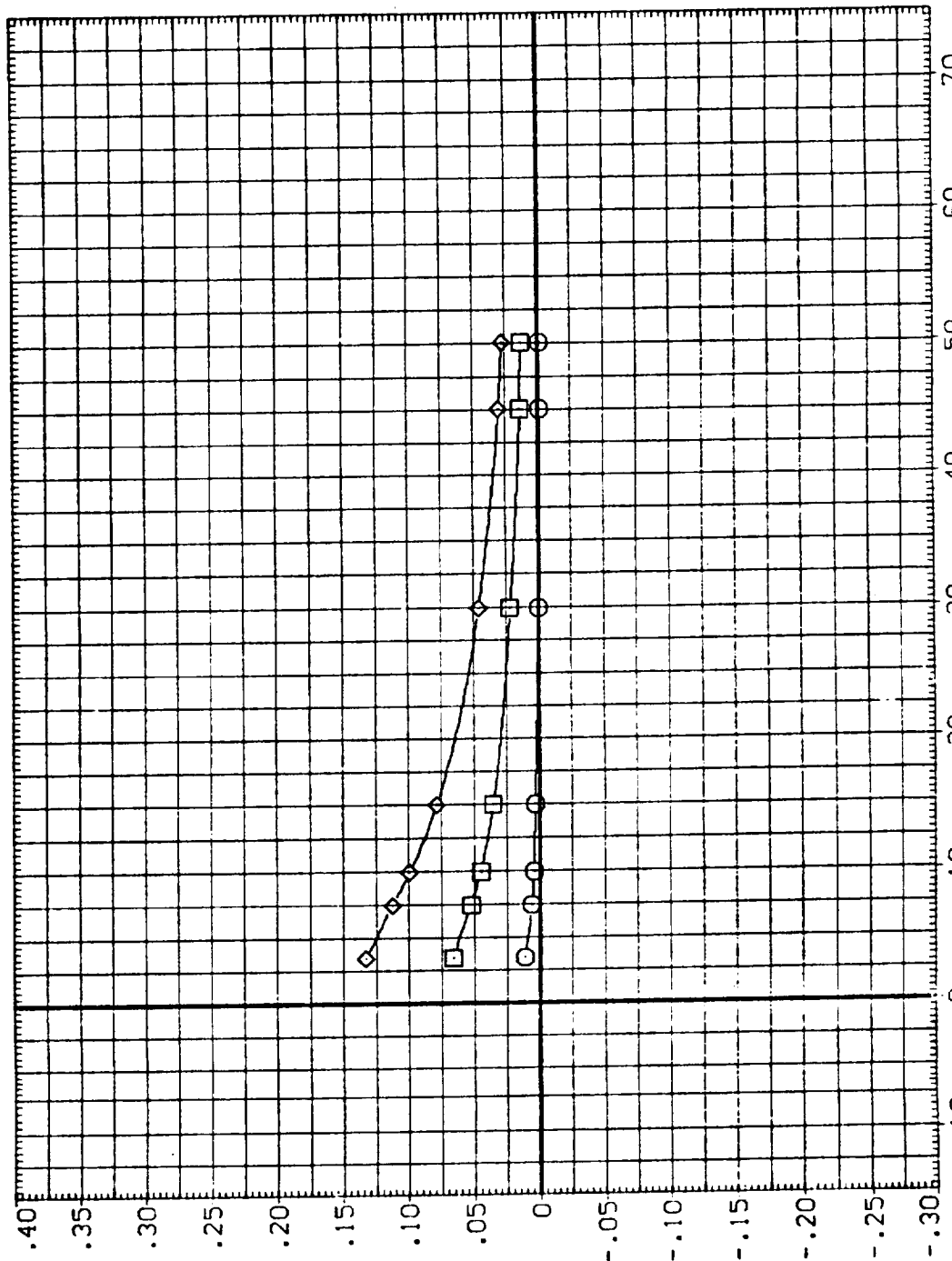


FIG. 4 EFFECT OF ORB INCIDENCE ON CARRIER (STAB=-1.0 DEG., ORB T/C OFF, ELEVON=0)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH021) ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB)TER DATA)  
 (4NH024) ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB)TER DATA)  
 (4NH025) ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB)TER DATA)

ORBITER ELEVON MACH STAB REFERENCE INFORMATION  
 4.000 .000 .000 2690.0000 SQ.FT.  
 6.000 .000 .000 474.8100 IN.  
 8.000 .000 .000 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

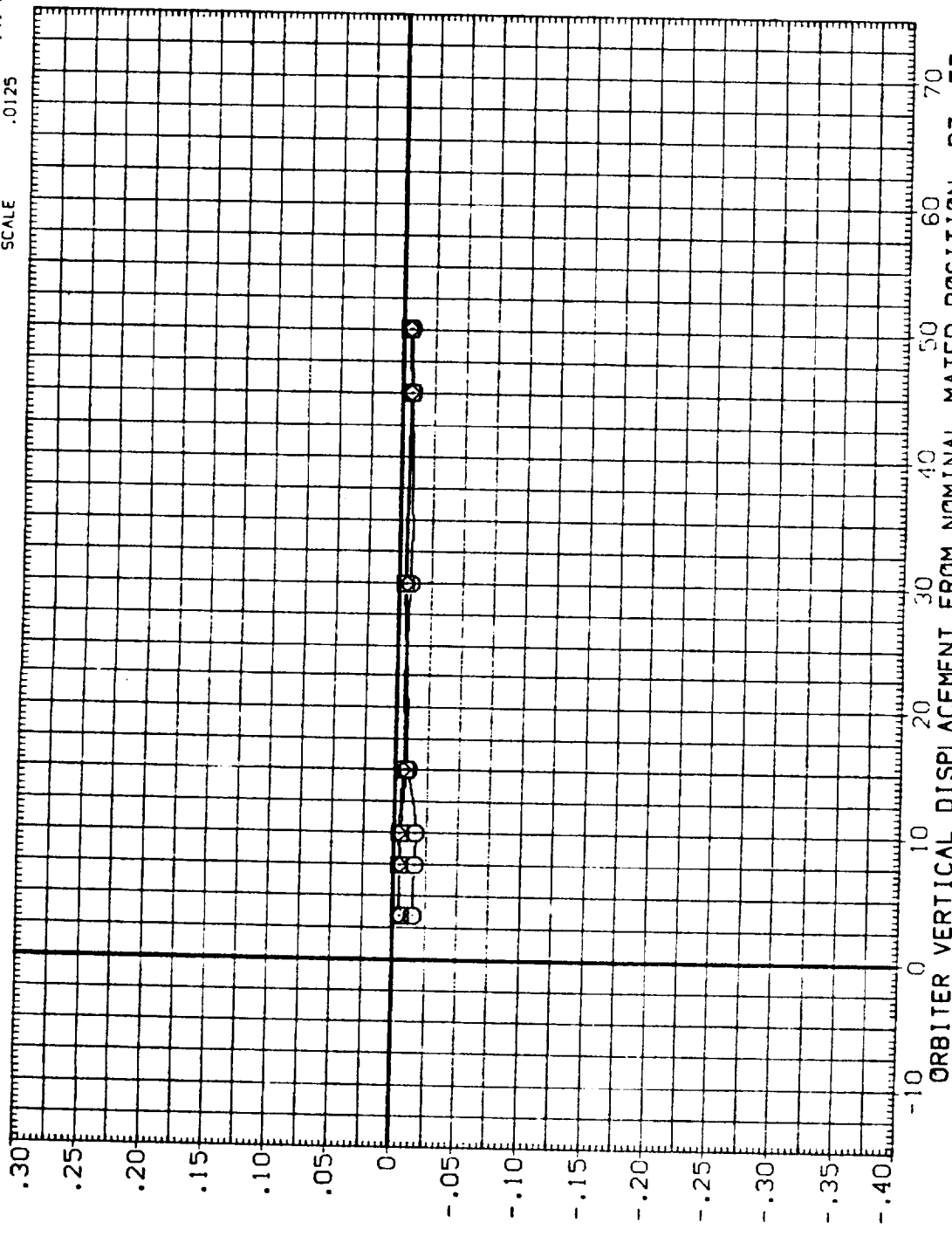


FIG. 5 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
 (A)ALPHAC= .00  
 ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.  
 PAGE 10

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH024)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	-1.000	LREF 474.8100 IN.
(4NH025)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	-1.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

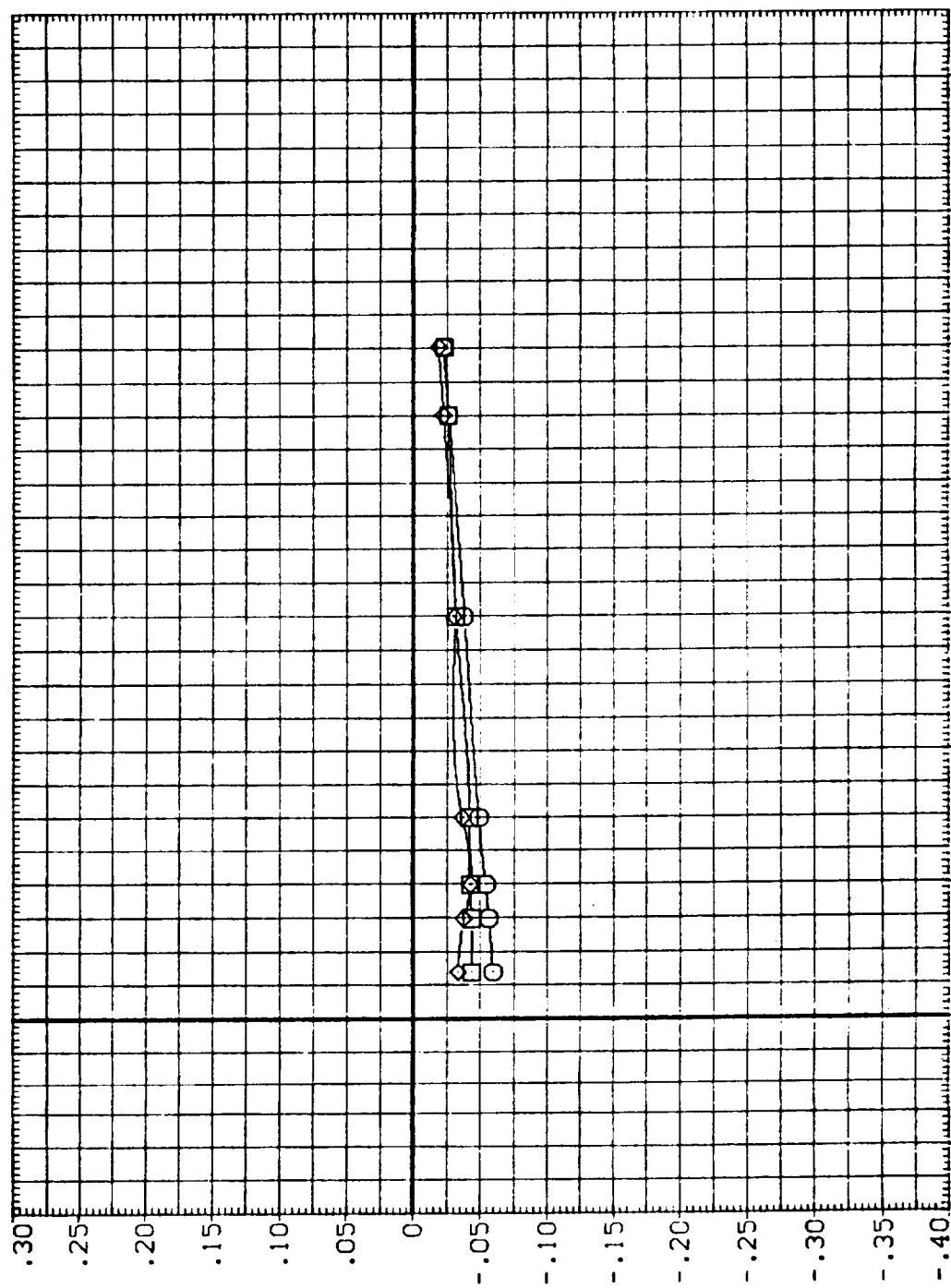


FIG. 5 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
(B)ALPHAC= 2.00

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 50.FT.
(4NH024)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	-1.000	LREF 474.8100 IN.
(4NH025)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	-1.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

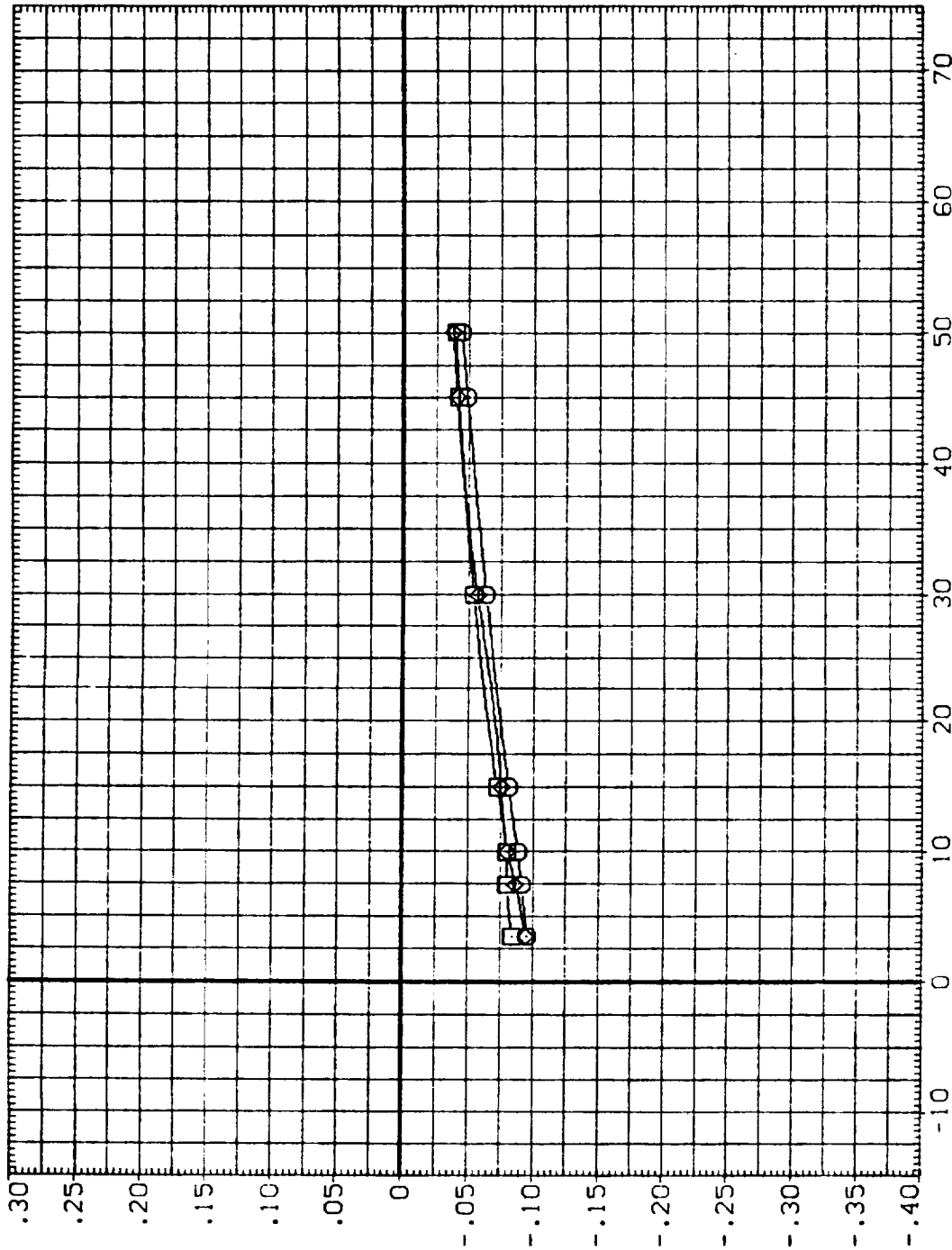


FIG. 5 EFFECT OF ORB VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.  
(C,ALPHAC= 4.00) PAGE 12

DATA SET SYMBOL  
(4NH021)  
(4NH024)  
(4NH025)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)

ORBITTER  
4.000  
6.000  
8.000

ELEVON  
.000  
.000  
.000

MACH  
.600  
.600  
.600

STAB  
-1.000  
-1.000  
-1.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1103.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

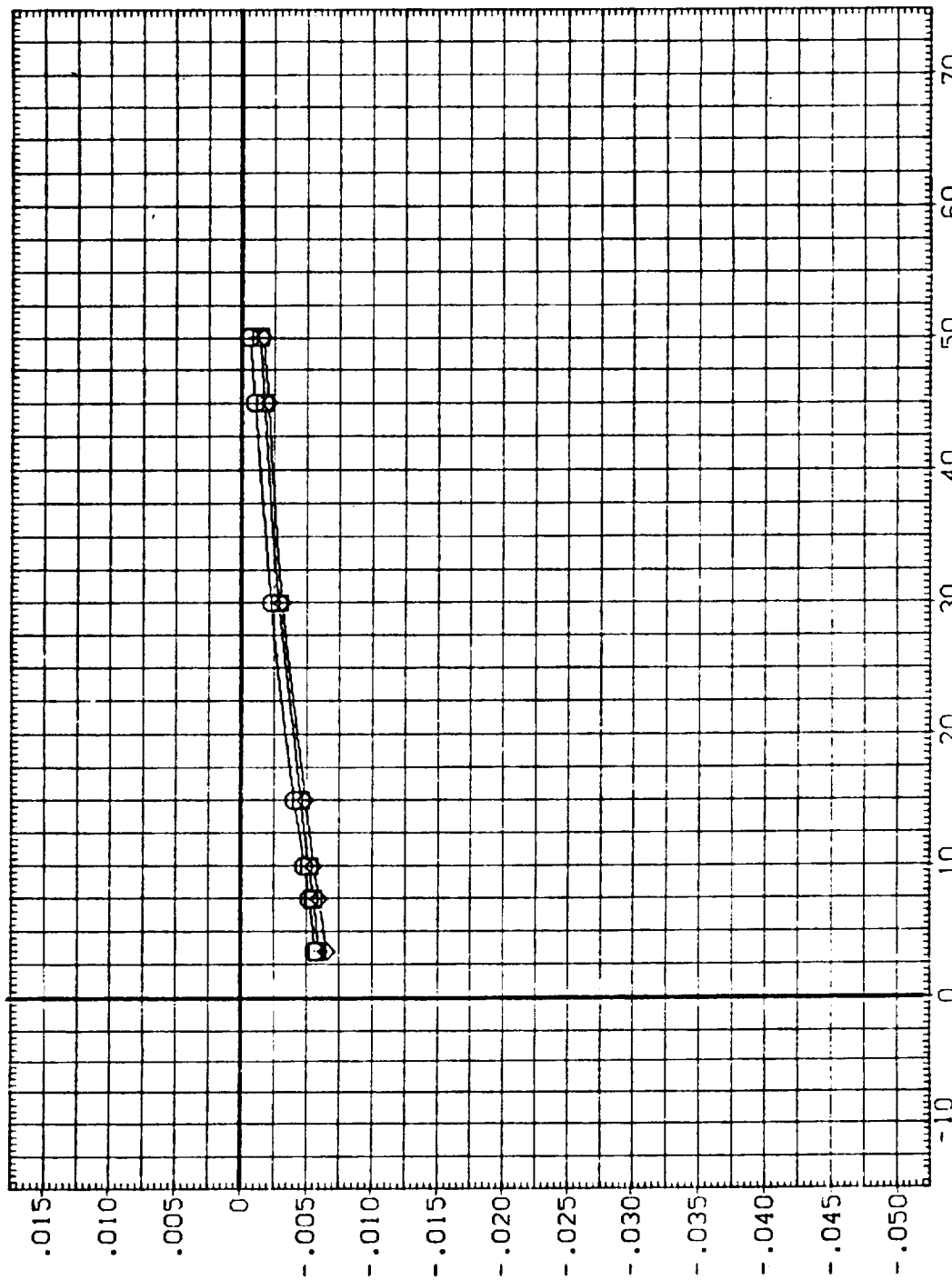


FIG. 5 EFFECT OF ORB INCIDENCE ON ORBITTER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NH021)	ARC 14-120(CA238)	747/1 AT1 Q251	(ORBITER DATA)	4.000	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH024)	ARC 14-120(CA238)	747/1 AT1 Q251	(ORBITER DATA)	6.000		.000	.600	-1.000	SREF	2690.0000 SO.FT.
(4NH025)	ARC 14-120(CA238)	747/1 AT1 Q251	(ORBITER DATA)	8.000		.000	.600	-1.000	LREF	474.8100 IN.
						.000			BREF	936.6800 IN.
									XMRP	1109.0000 IN. X0
									YMRP	.0000 IN. Y0
									ZMRP	375.0000 IN. Z0
									SCALE	.0125

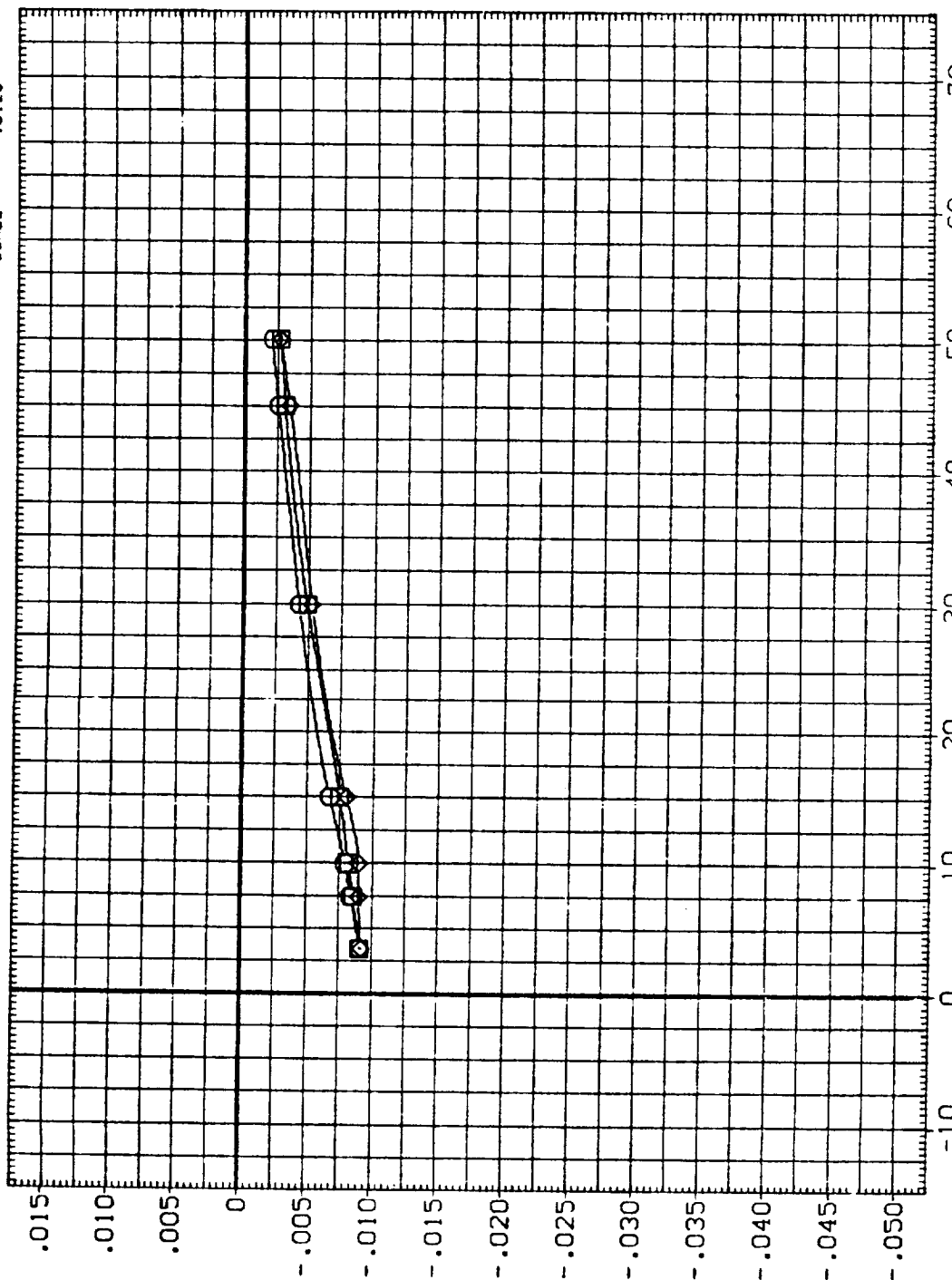


FIG. 5 EFFECT OF ORB INCIDENCE ON ORBITER(ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
(B)ALPHAC= 2.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH024)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	-1.000	LREF 474.8100 IN.
(4NH025)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	.000	.600	-1.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

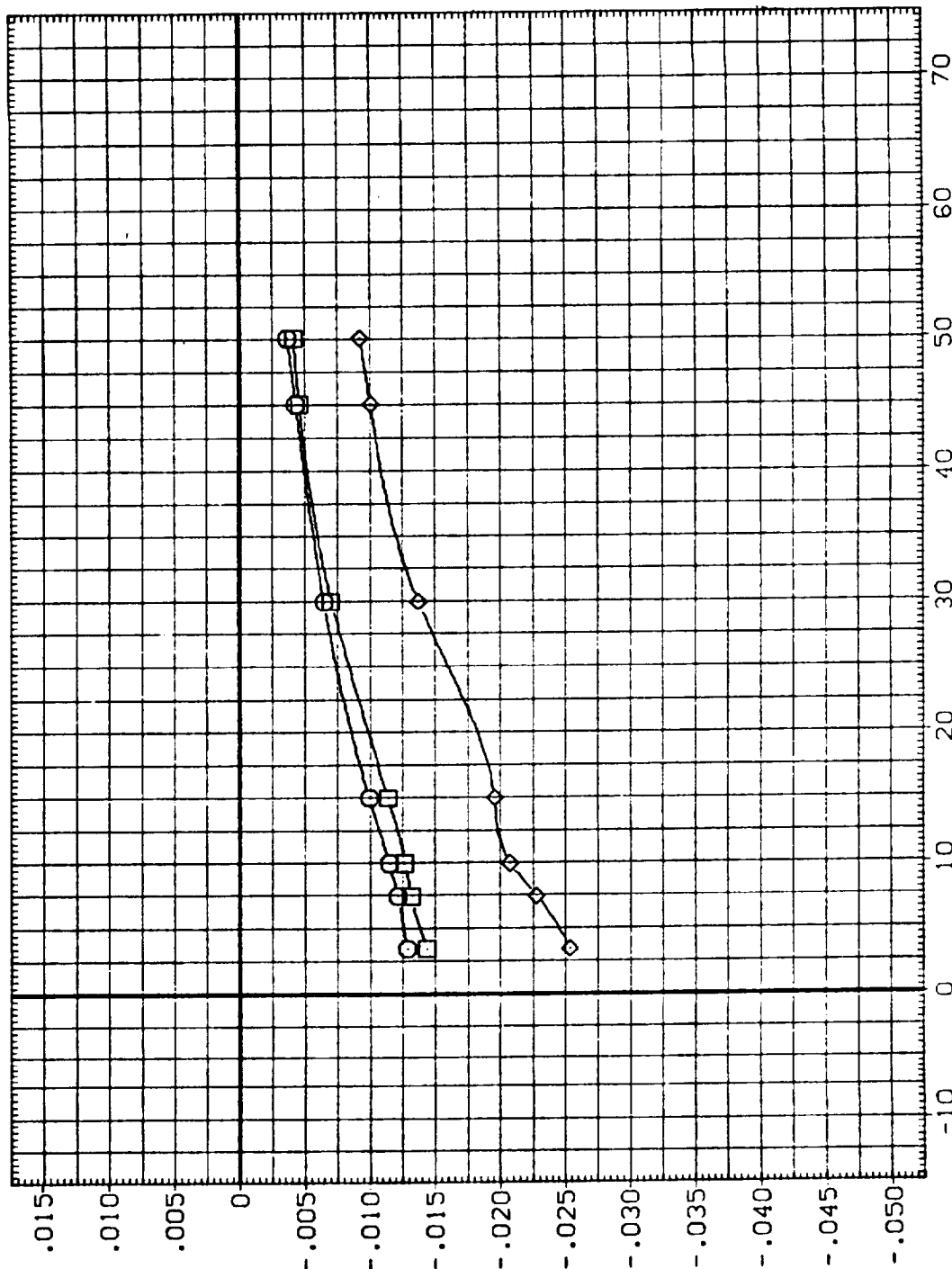


FIG. 5 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)

( 4NH021 )  
( 4NH024 )  
( 4NH025 )

### CONFIGURATION DESCRIPTION

ARC 14-120(CA23B)  
ARC 14-120(CA23B)  
ARC 14-120(CA23B)

47/I AT1 02S1  
47/I AT1 02S1  
47/I AT1 02S1

```
(ORBITER DATA)
(ORBITER DATA)
(ORBITER DATA)
```

10RB  
4.000  
6.000  
8.000

STAB	
-1.000	
-1.000	
-1.000	

REF  
SREF  
LREF  
BREF  
XMRP  
YMRP  
ZMRP  
SCALE

ANCE INFORMATION

	SO.FT.
1690.0000	IN.
474.8100	IN.
936.6800	IN.
109.0000	IN.
.0000	IN.
375.0000	IN.
.0125	IN.

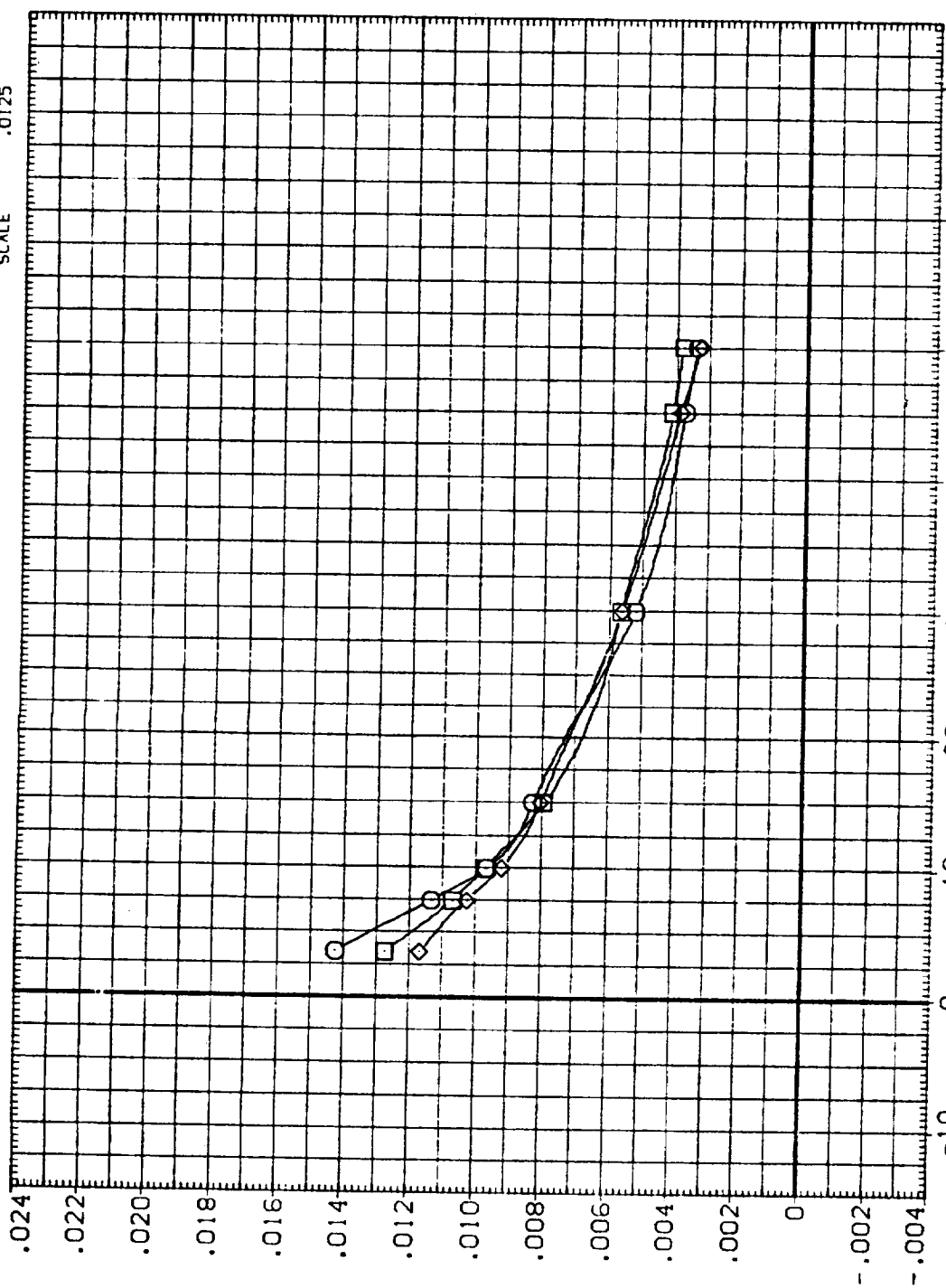


FIG. 5 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
(A)ALPHAC= .00



REFERENCE INFORMATION	
SREF	2690.0000 50.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN. X0
YMRP	.0000 IN. Y0
ZMRP	375.0000 IN. Z0
SCALE	.0125

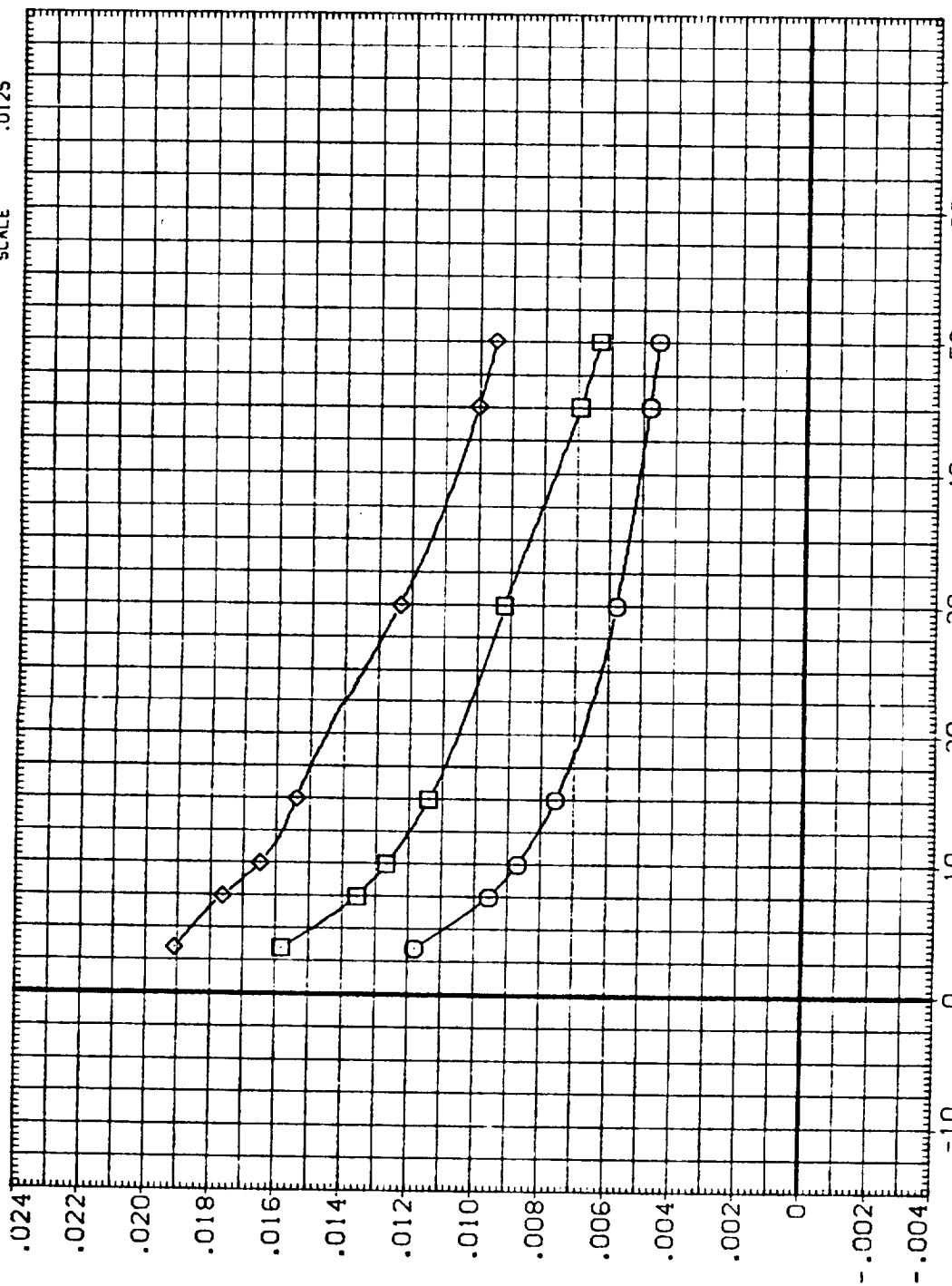
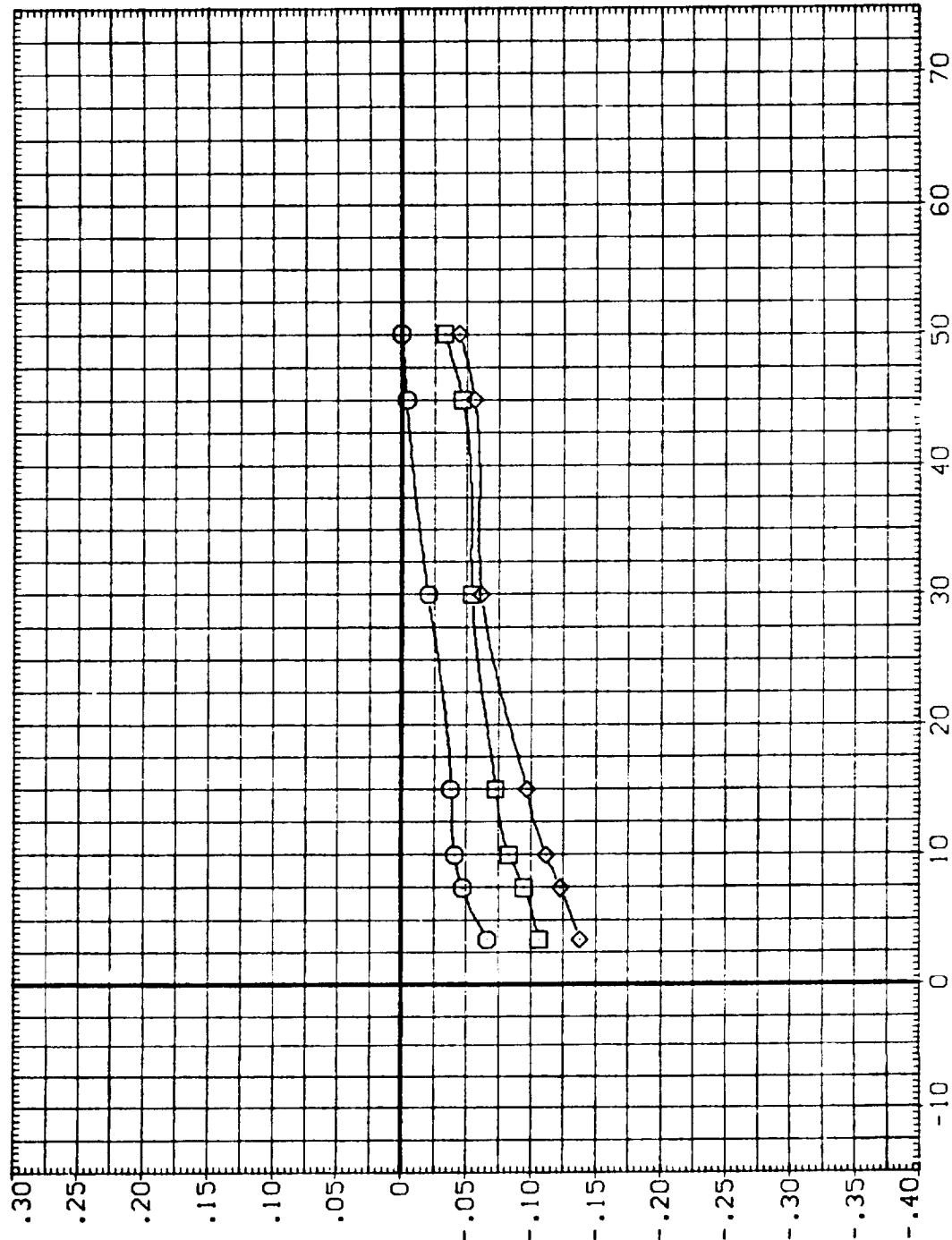


FIG. 5 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=0)  
(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ. FT.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	-1.000	LREF 327.7800 IN.
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	8.000	5.000	.600	-1.000	BREF 2348.0400 IN.
						XHRP 1339.9000 IN. XC
						ZHRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

FIG. 6 EFFECT OF ORB INCIDENCE ON CARRIER (STAB=-1.0 DEG., ORB T/C OFF, ELEVON=5)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	LREF 327.7800 IN.
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						SCALE 190.7500 IN ZC

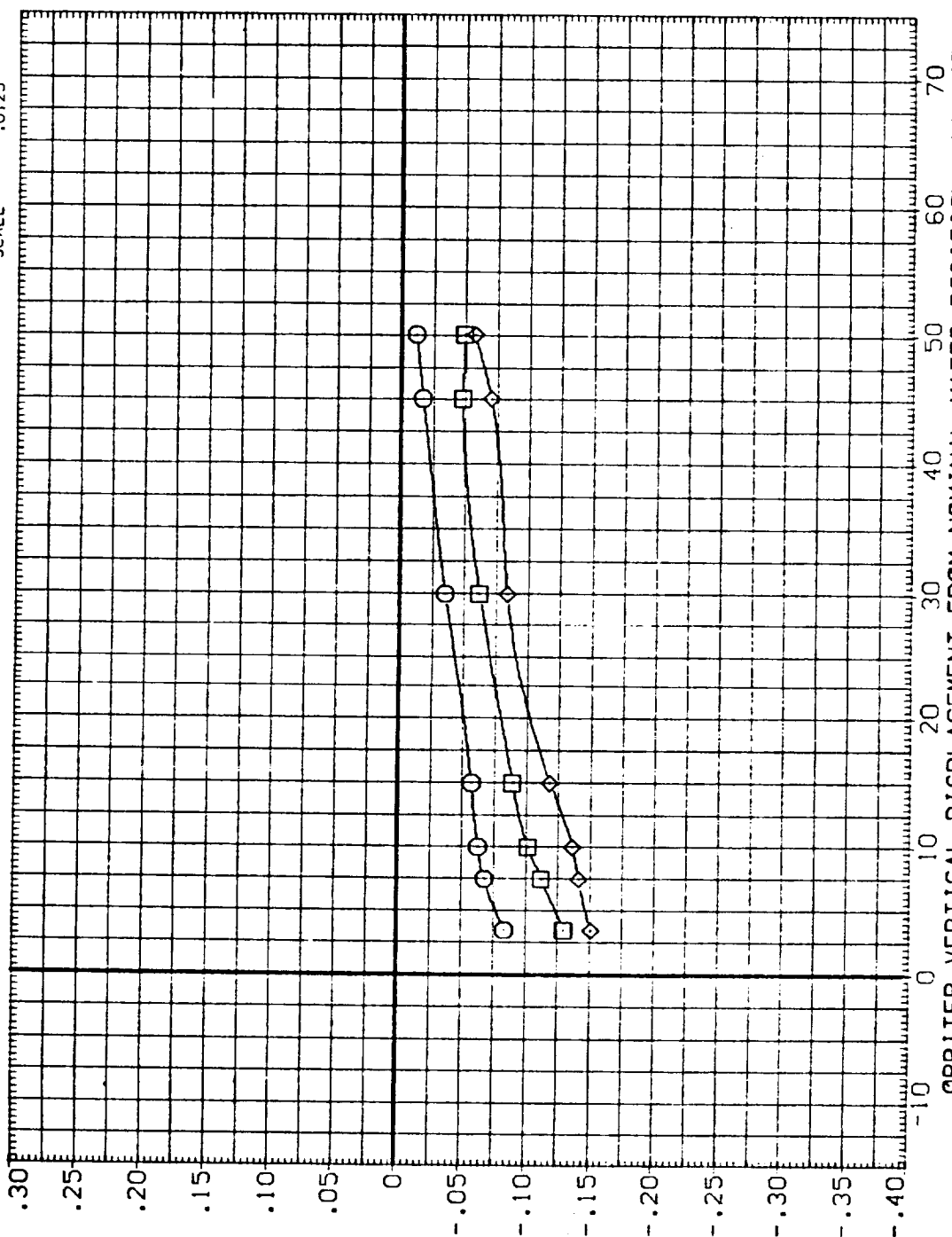


FIG. 6 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)  
(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF	5500.0000	50. FT.	
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	UREF	327.7800	IN.	
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	BREF	2348.0400	IN.	XC
						XMRP	1339.5000	IN.	YC
						YMRP	.0000	IN.	YC
						ZMRP	190.7500	IN	ZC
						SCALE	.0125		

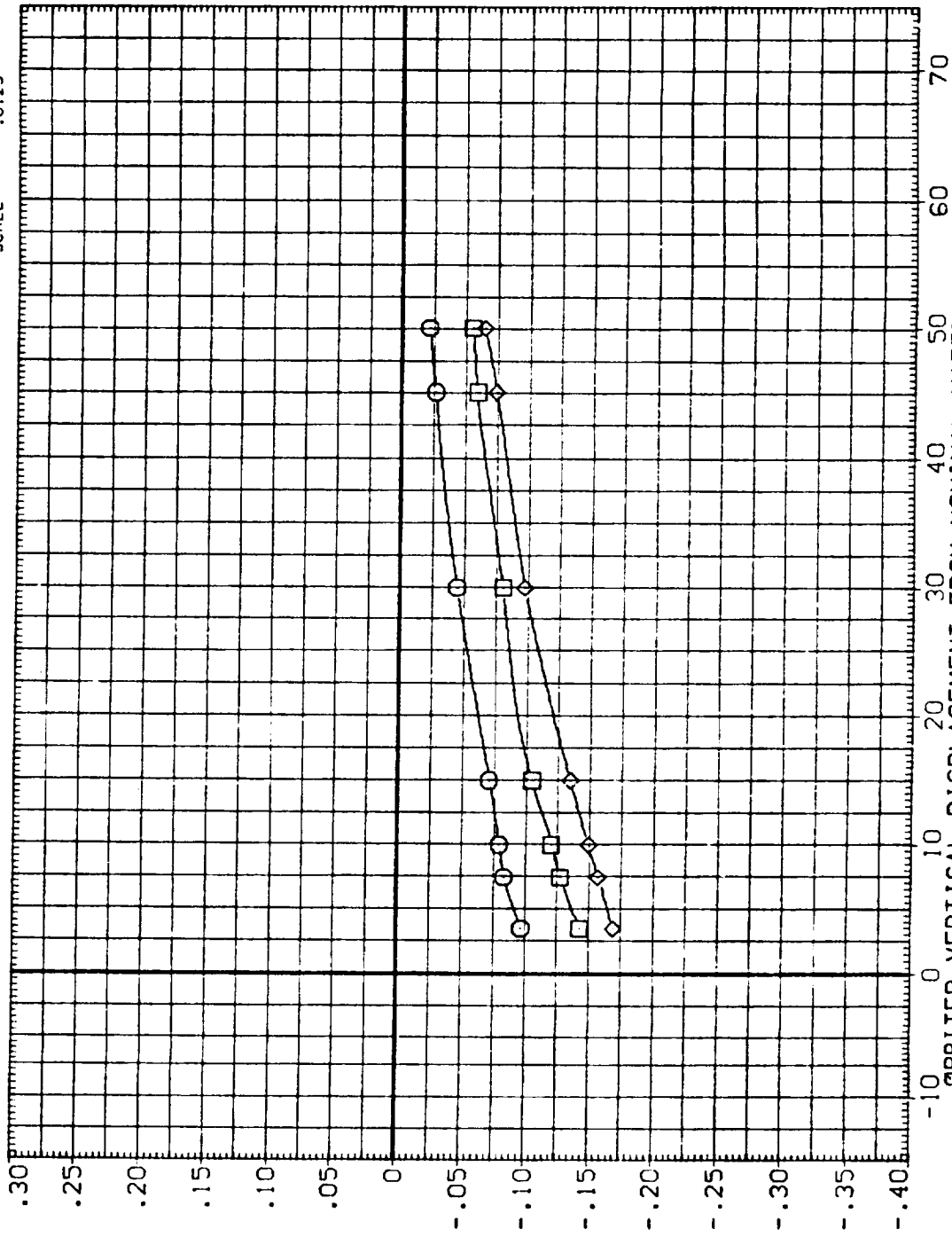


FIG. 6 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)  
 (C)ALPHAC= 4.00

DATA SET SYMBOL      CONFIGURATION DESCRIPTION      ORB      ELEVON      MACH      STAB      REFERENCE INFORMATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SO.FT.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	LREF 327.7800 IN.
(PNH005)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

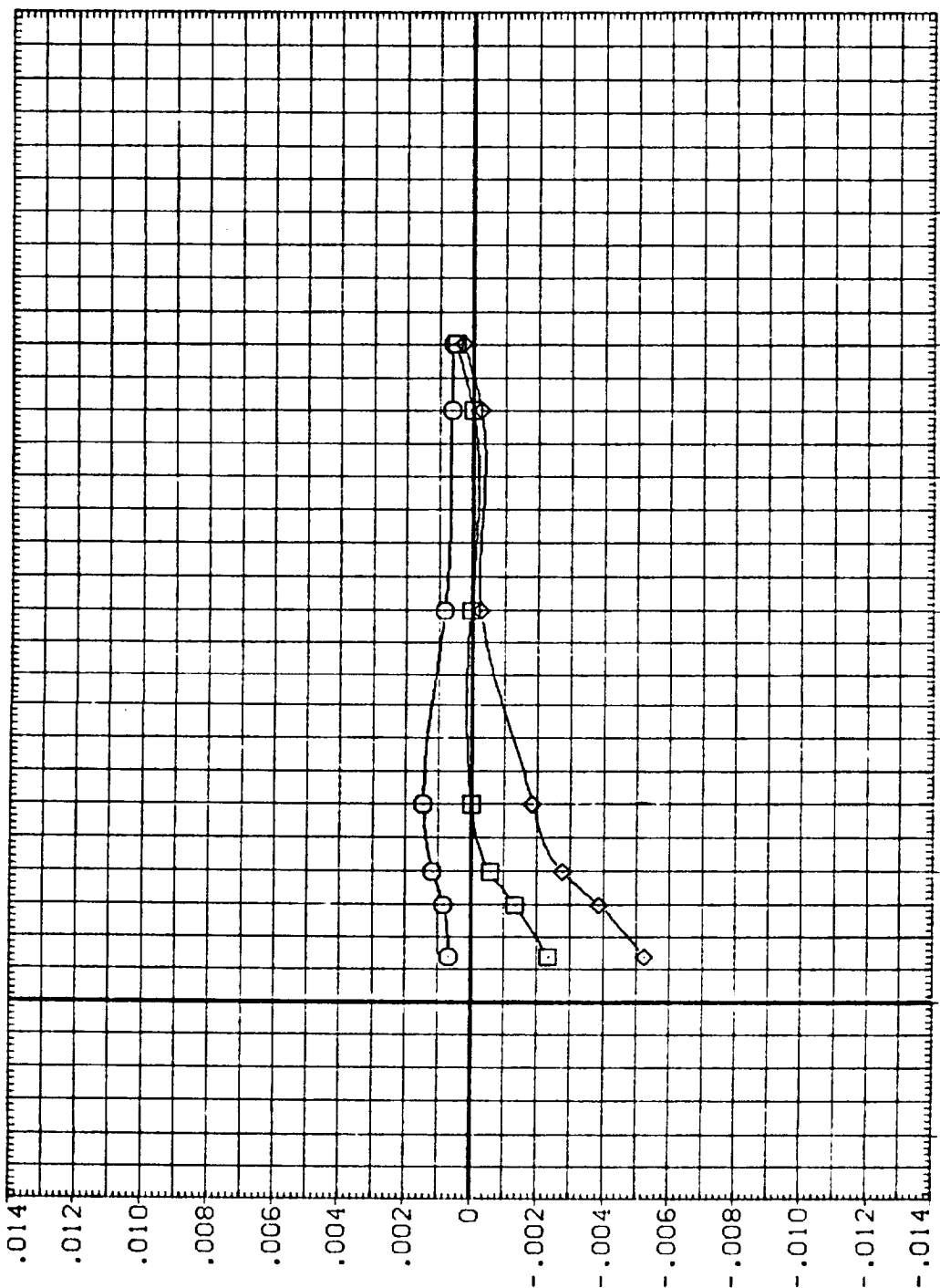


FIG. 6 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG., ORB T/C OFF, ELEVON=5)  
(A) ALPHAC = .00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH008)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	LREF 327.7800 IN.
(PNH009)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

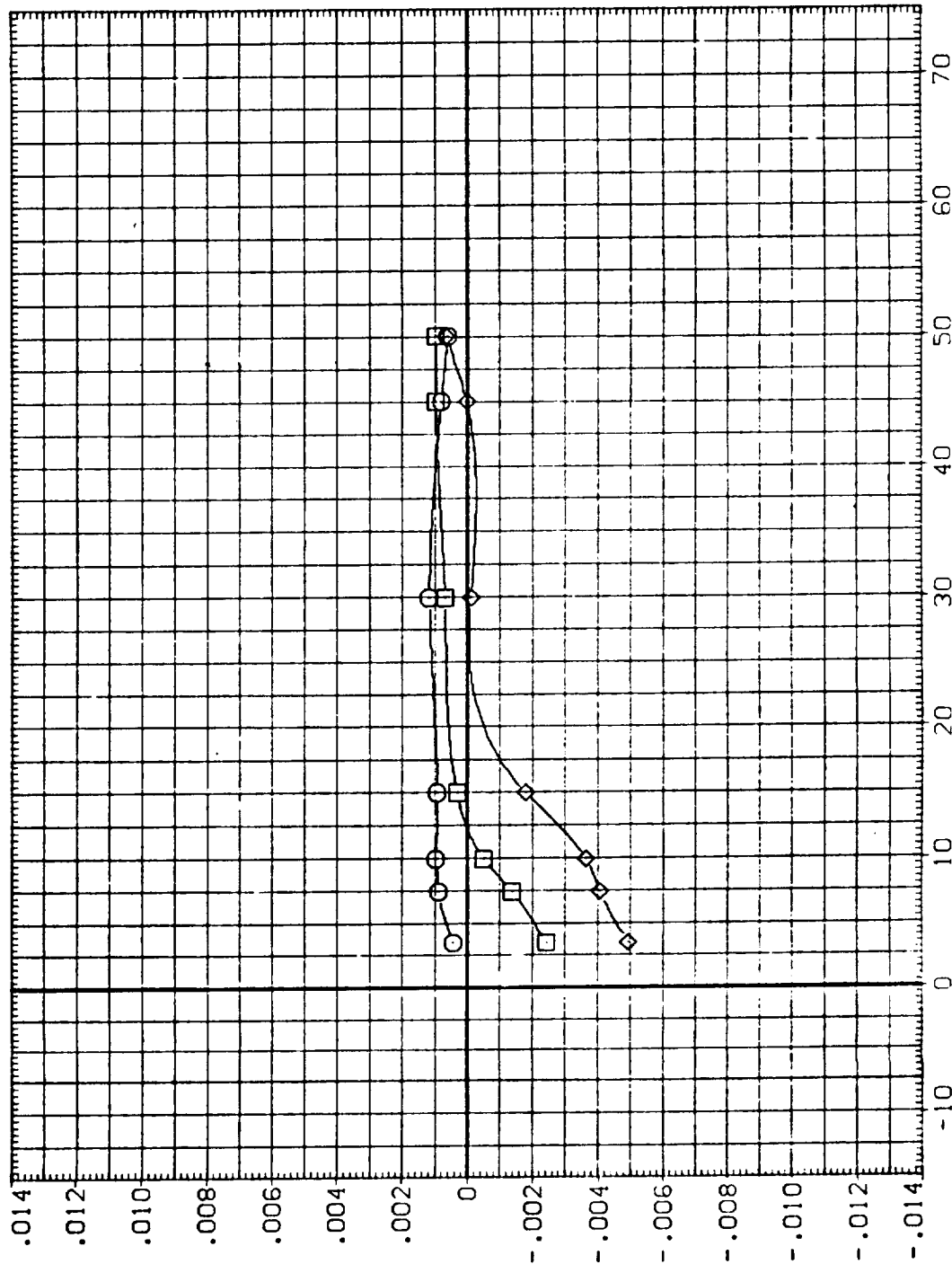


FIG. 6 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	LREF 327.7800 IN.
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						SCALE 190.7500 IN ZC

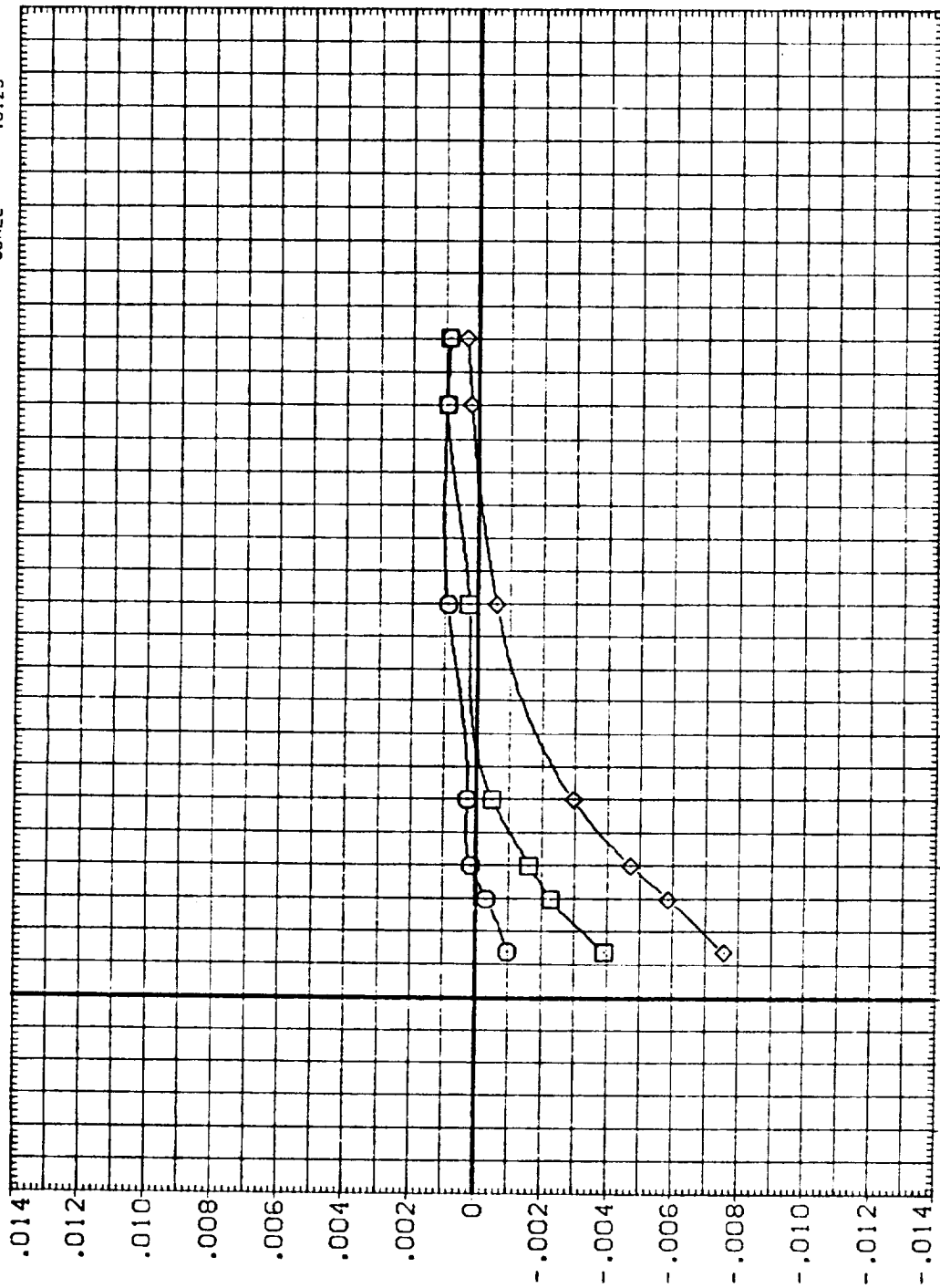


FIG. 6 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)  
(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA233)	747/1 AT1 Q2S1 (CARRIER DATA)	4.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH008)	ARC 14-120(CA238)	747/1 AT1 Q2S1 (CARRIER DATA)	6.000	.600	-1.000	LREF 327.7800 IN.
(PNH009)	ARC 14-120(CA238)	747/1 AT1 Q2S1 (CARRIER DATA)	8.000	.600	-1.000	BREF 2348.0400 IN.
						XMRP 1338.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

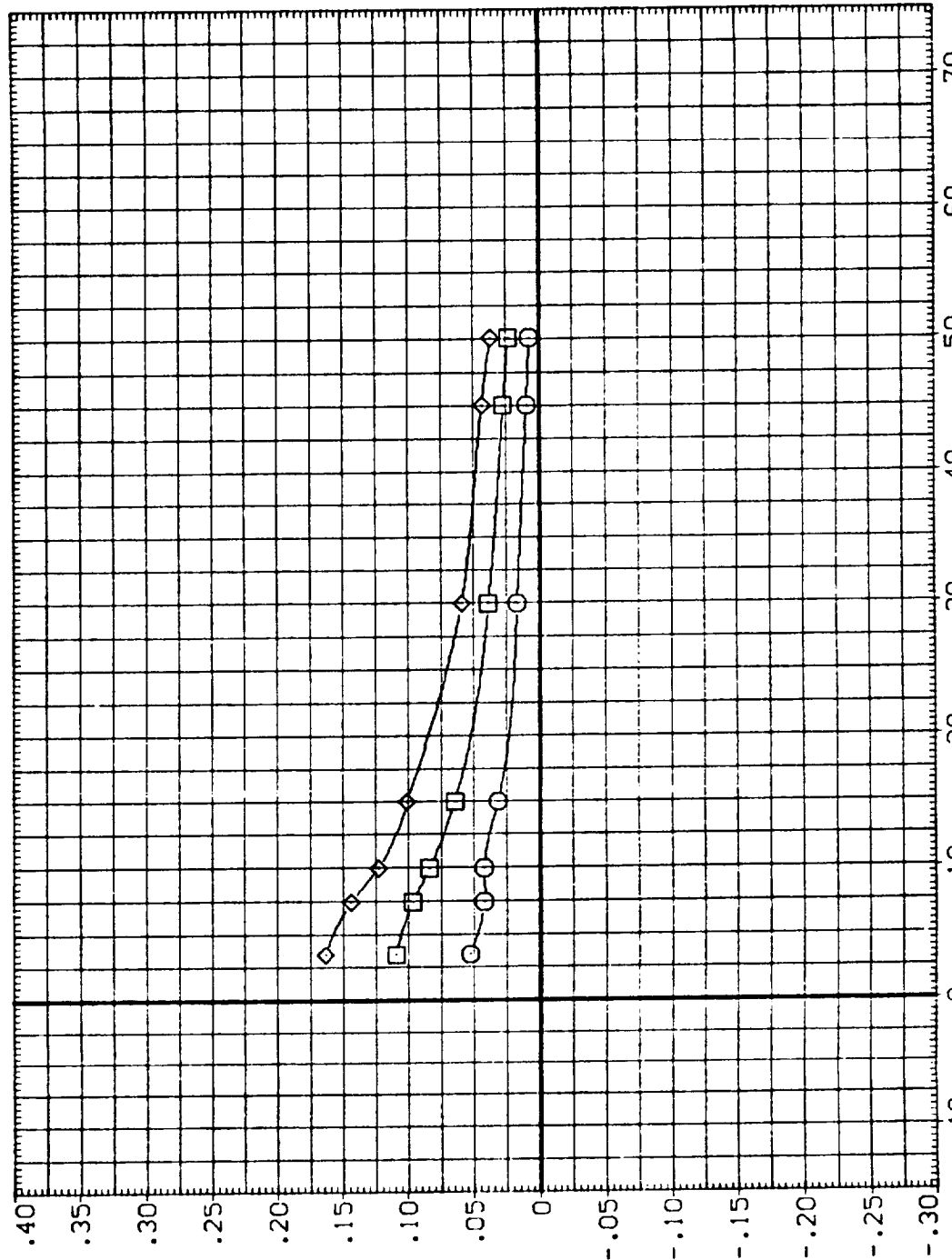


FIG. 6 EFFECT OF ORB INCIDENCE ON CARRIER (STAB=-1.0 DEG., ORB T/C OFF, ELEVON=5)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	ELEVON	MACH	STAB	REFERENCE INFORMATION		
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF	5500.0000	SQ.FT.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	LREF	327.7800	IN.
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	BREF	2348.0400	IN.
						XMRP	1339.9000	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0125	

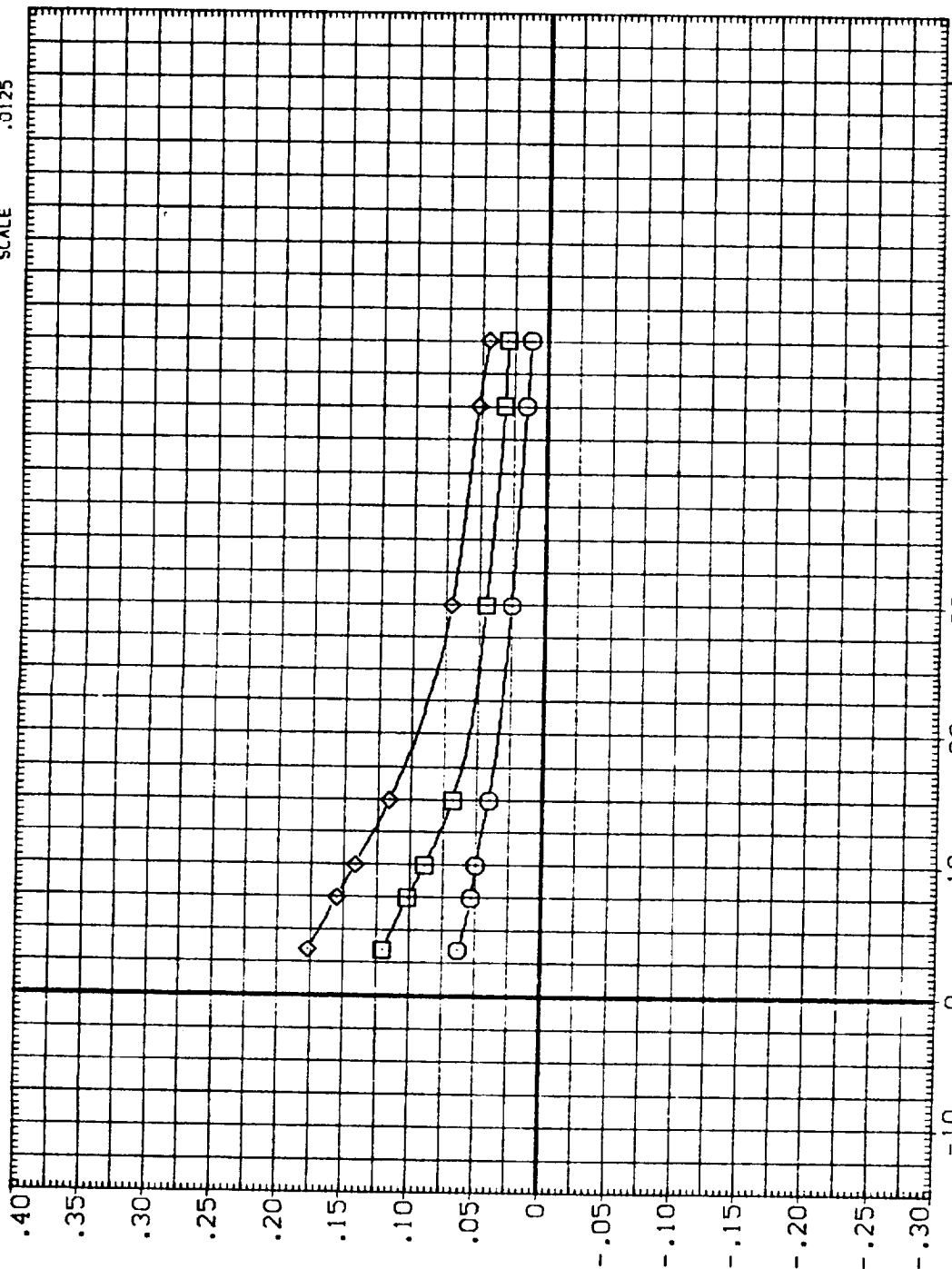


FIG. 6 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)  
(B)ALPHAC= 2.00

( PNH011 )  
( PNH008 )  
( PNH009 )

**CONF IGURATION DESCRIPTION**

ARC	14-120(CA23B)	747/1	AT1	Q2S1	(CARRIER DATA)
ARC	14-120(CA23B)	747/1	AT1	Q2S1	(CARRIER DATA)
ARC	14-120(CA23B)	747/1	AT1	Q2S1	(CARRIER DATA)

**ICRB**

468  
000  
000  
000

**ELEVEN**

5.000  
5.000  
5.000

**MACH**

009.  
009.  
009.

STAB

1-1.000  
1-1.000  
1-1.000

## REFERENCE INFORMATION

SREF	5500.0000	50. FT.
LREF	327.7800	IN.
BREF	7348.0400	IN.
XMRP	1339.9000	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN ZC
SCALE	.0125	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

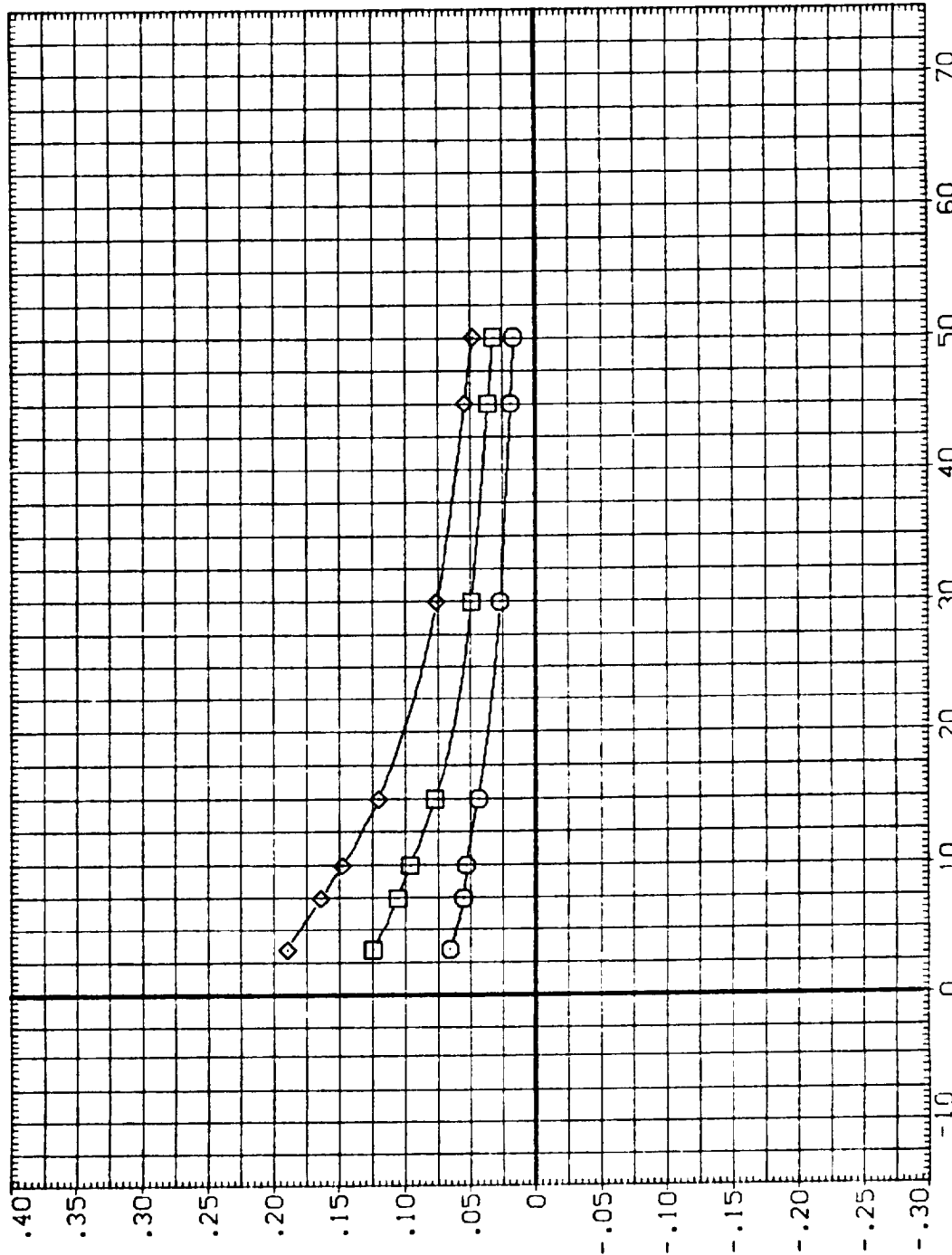


FIG. 6 EFFECT OF ORB INCIDENCE ON CARRIER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH011) ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)  
 (4NH008) ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)  
 (4NH009) ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 4.000 5.000 .600 -1.000 SREF 2690.0000 SQ.FT.  
 6.000 5.000 .600 -1.000 LREF 474.8100 IN.  
 8.000 5.000 .600 -1.000 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

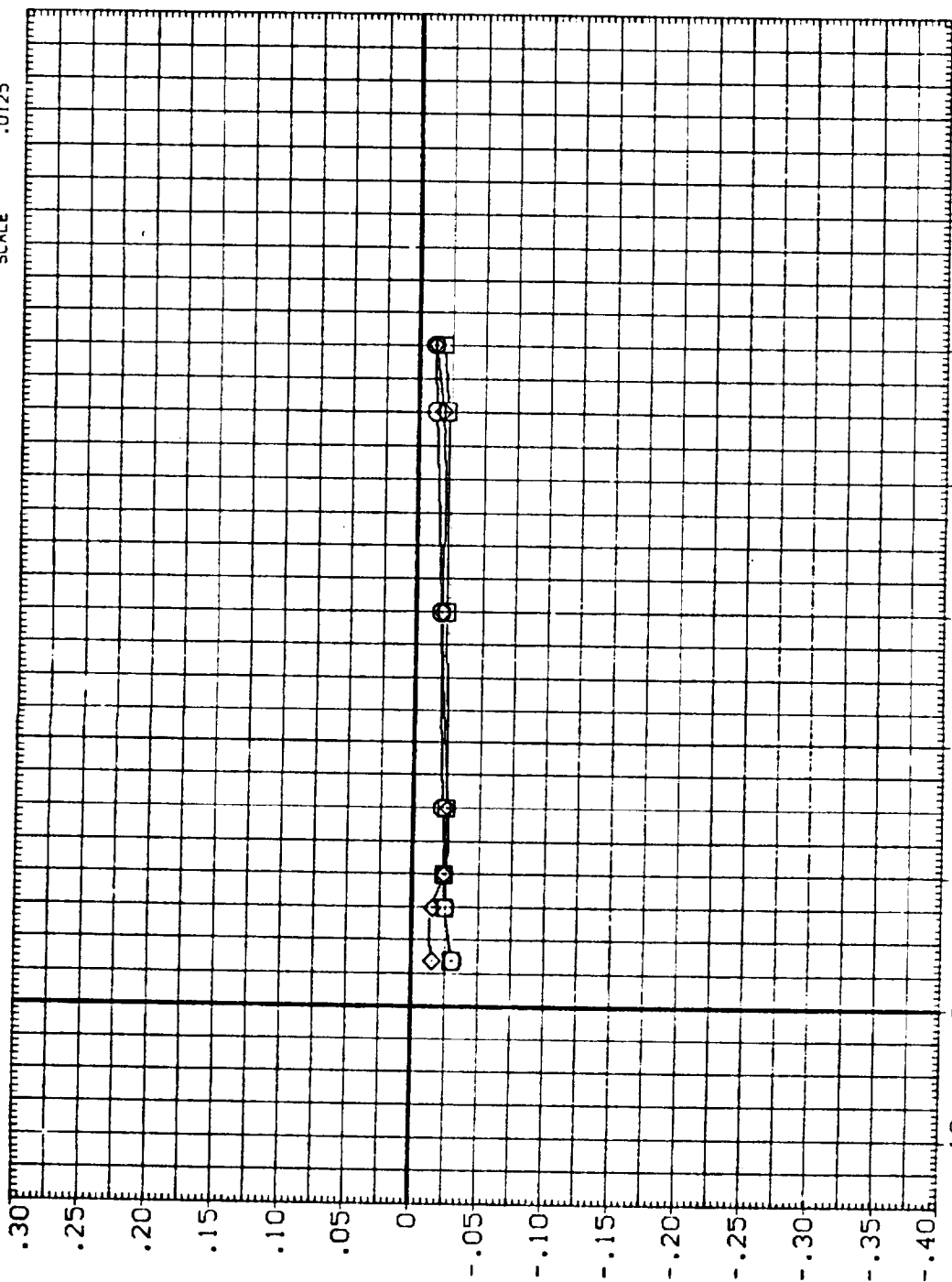


FIG. 7 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)  
 (A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH011)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	4.000	5.000	.600	-1.000	SREF	2690.0000 SQ.FT.
(4NH008)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	5.000	.600	-1.000	LREF	474.8100 IN.
(4NH009)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	8.000	5.000	.600	-1.000	BREF	936.6800 IN.
						XMRP	1109.0000 IN. YD
						YMRP	.0000 IN. YD
						ZMRP	375.0000 IN. ZD
						SCALE	.0125

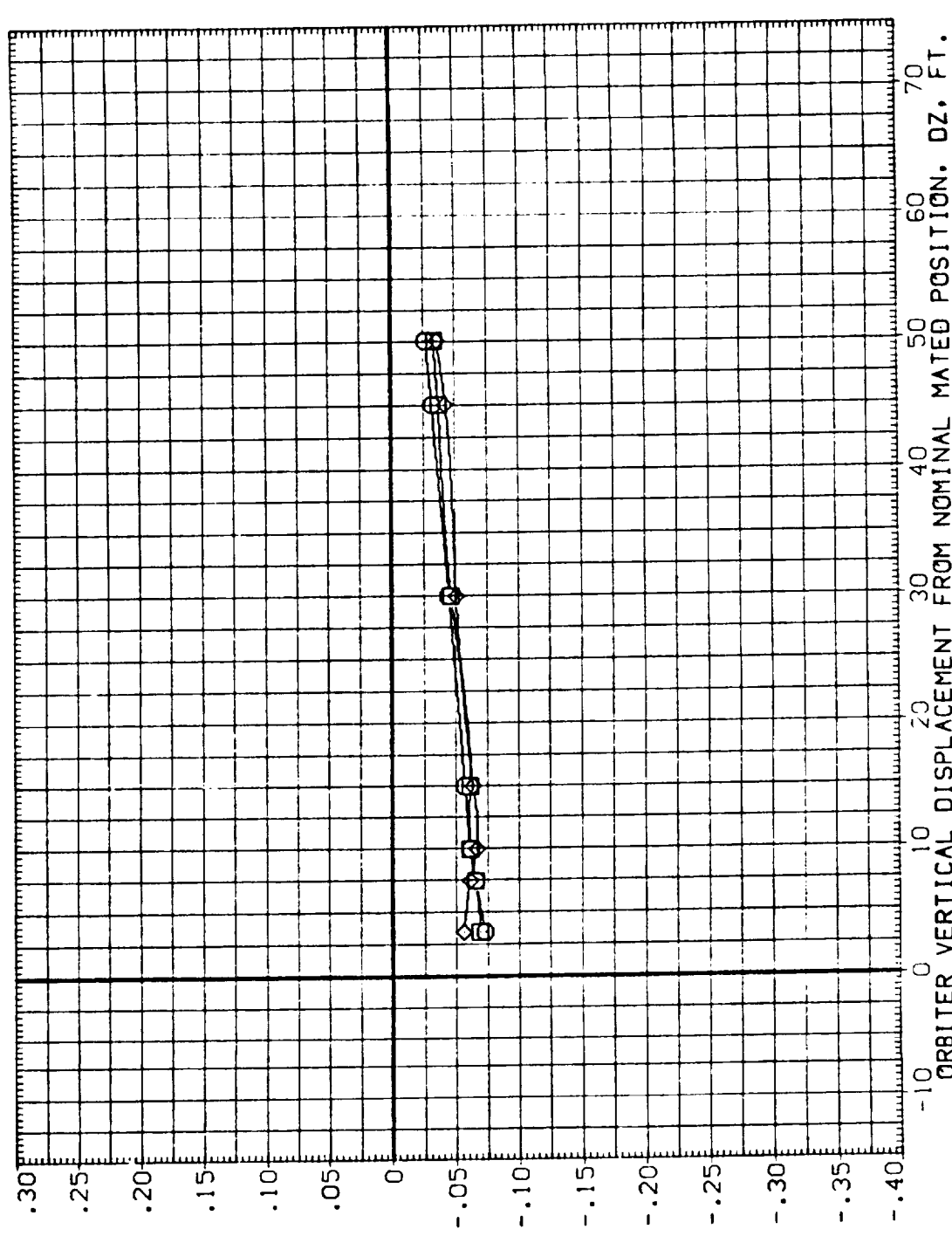


FIG. 7 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)  
(B)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NH011) ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORB)ITER DATA) 10RB ELEVON MACH STAB REFERENCE INFORMATION  
 (4NH008) ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORB)ITER DATA) 4.000 5.000 .600 -1.000 SREF 2690.0000 SQ.FT.  
 (4NH009) ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORB)ITER DATA) 6.000 5.000 .600 -1.000 LREF 474.8100 IN.  
 (4NH009) ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORB)ITER DATA) 8.000 5.000 .600 -1.000 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

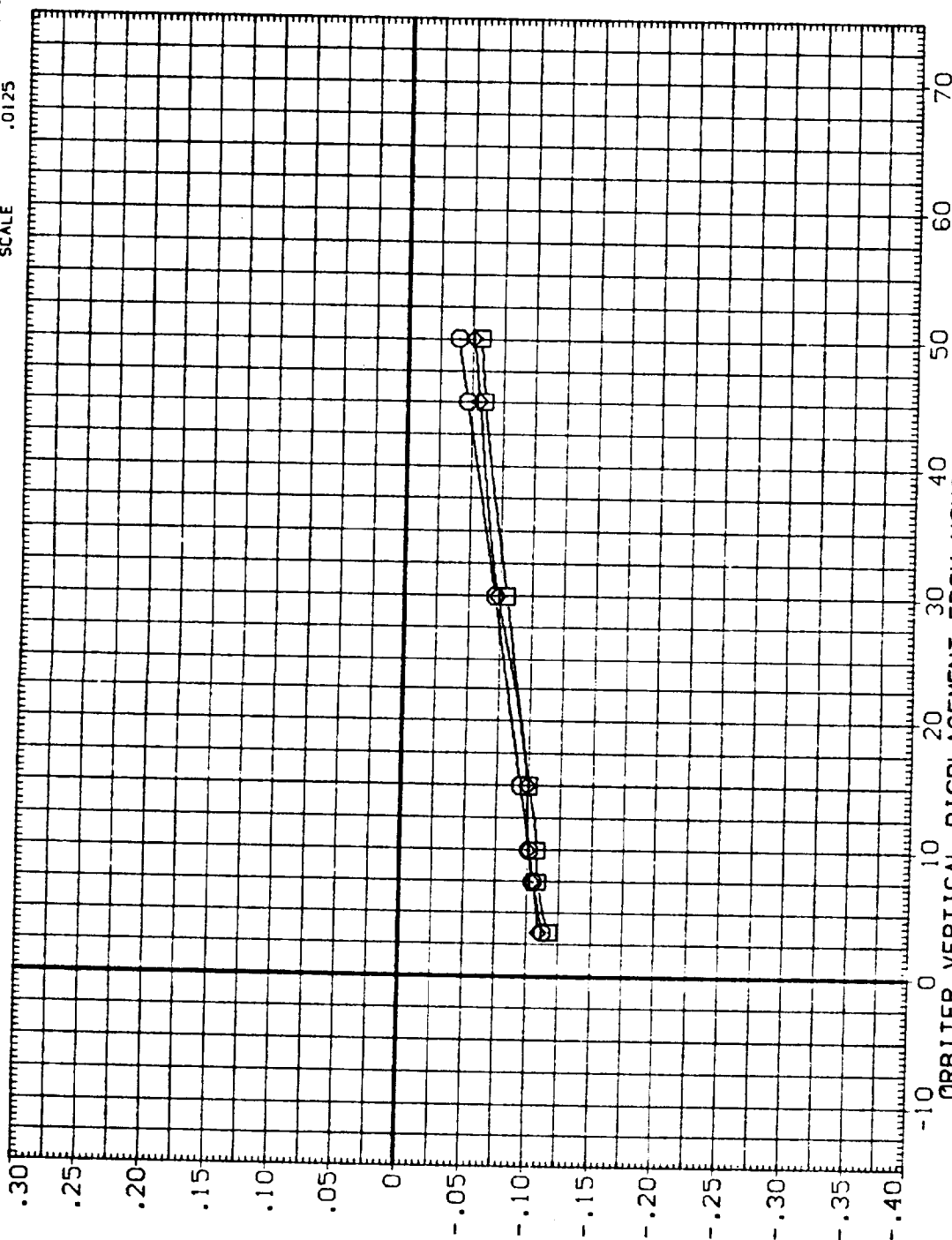


FIG. 7 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)

(C)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH011)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.600	-1.000	SREF	2650.0000 SQ.FT.
(4NH008)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	-1.000	LREF	474.8100 IN.
(4NH009)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	5.000	.600	-1.000	BREF	936.6800 IN.
						XMRP	1109.3000 IN. X0
						YMRP	.0000 IN. Y0
						ZMRP	375.0000 IN. Z0
						SCALE	.0125

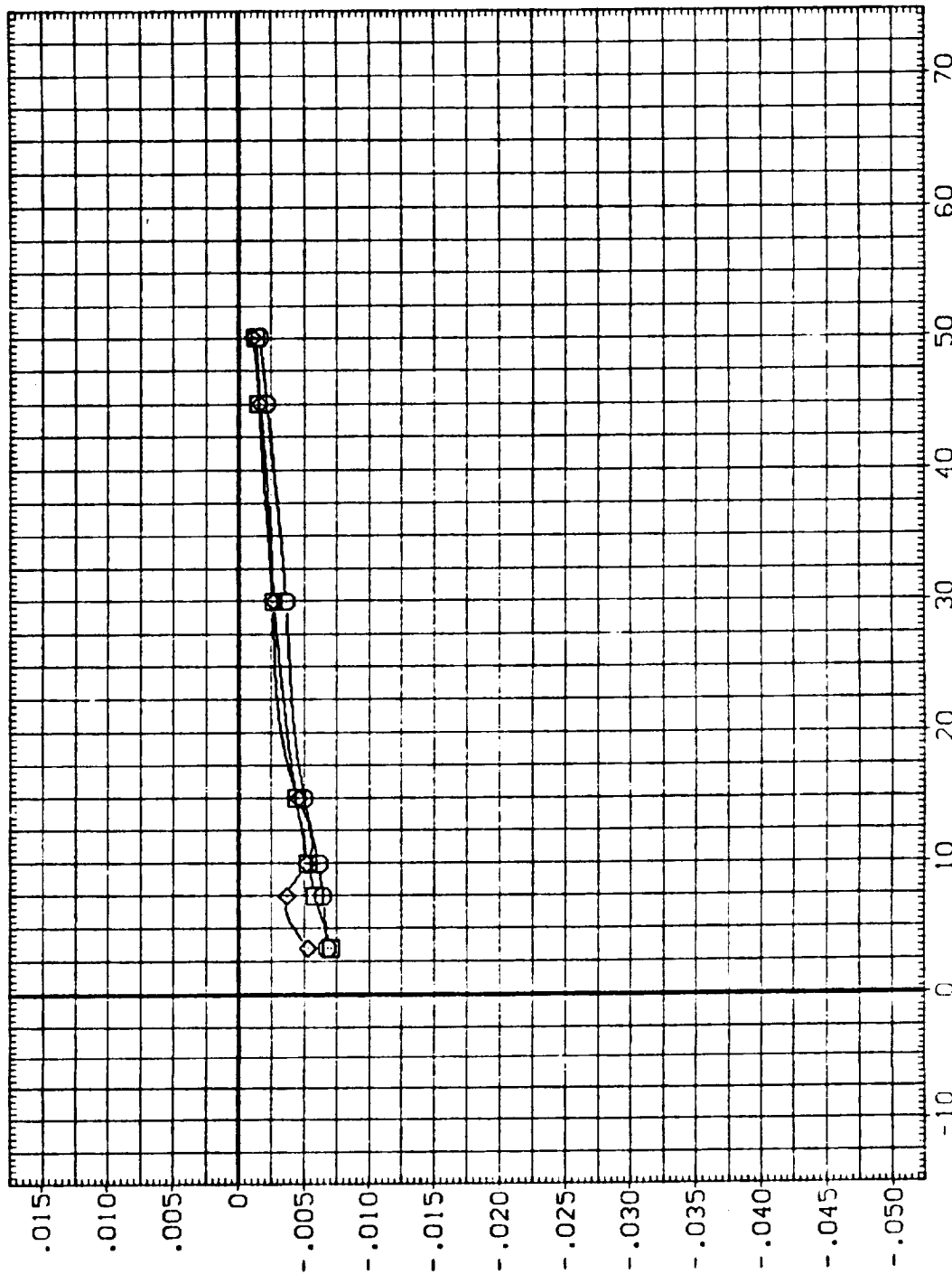


FIG. 7 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH011) ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)  
 (4NH008) ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)  
 (4NH009) ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)

ORBITER INFORMATION  
 SREF 2690.0000 SQ. FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

ORBITER INFORMATION  
 STAB -1.000  
 MACH .600  
 ELEVON 5.000  
 IORB 4.000  
 6.000  
 8.000

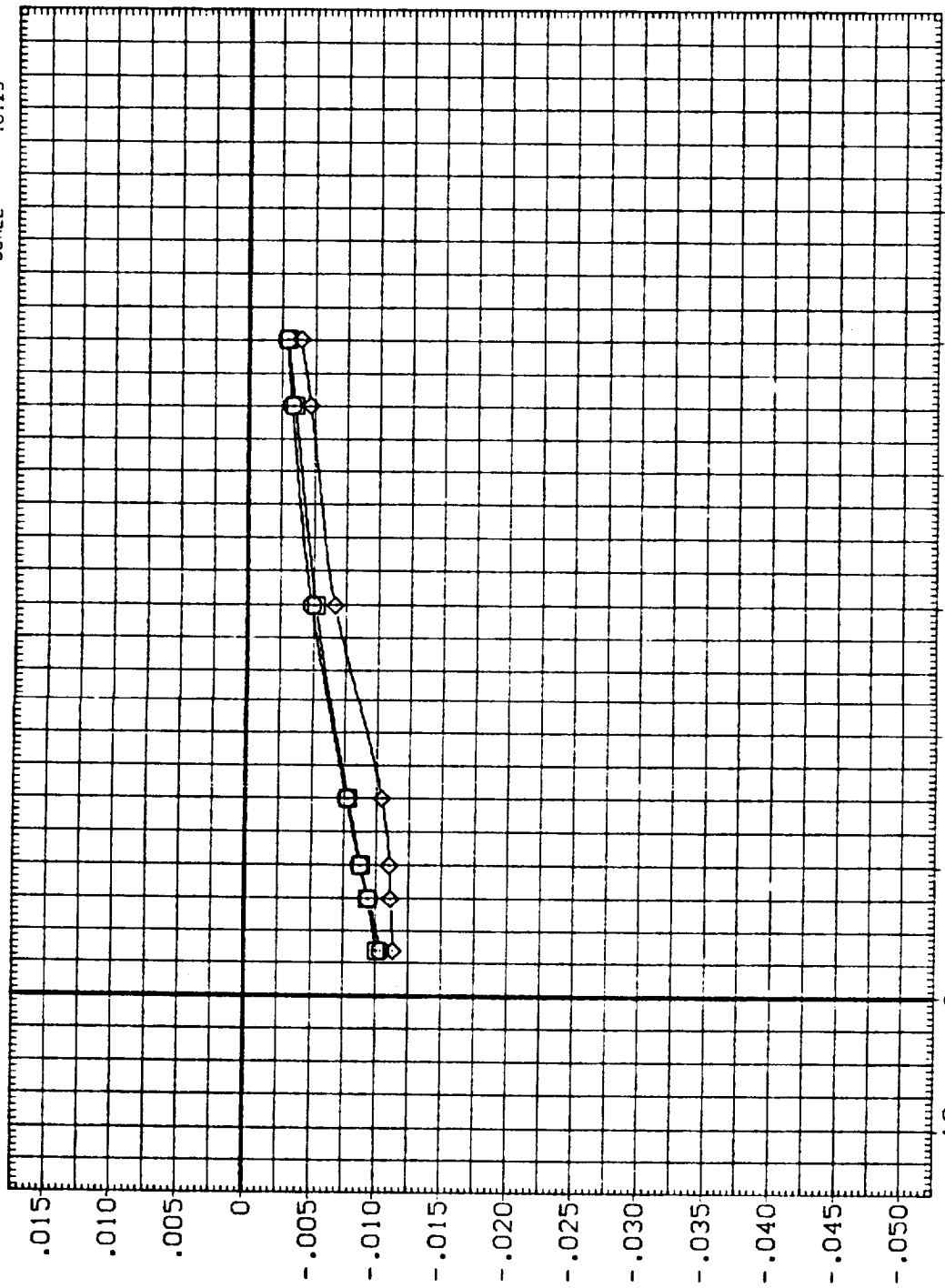


FIG. 7 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG., ORB T/C OFF, ELEVON=5)

(B)ALPHAC= 2.00

DATA SET SYMBOL  
(4N+011)  
(4N+008)  
(4N+009)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB/TER DATA)  
ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB/TER DATA)  
ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB/TER DATA)

IORB ELEVON MACH STAB  
4.000 5.000 .600 -1.000  
6.000 5.000 .600 -1.000  
8.000 5.000 .600 -1.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

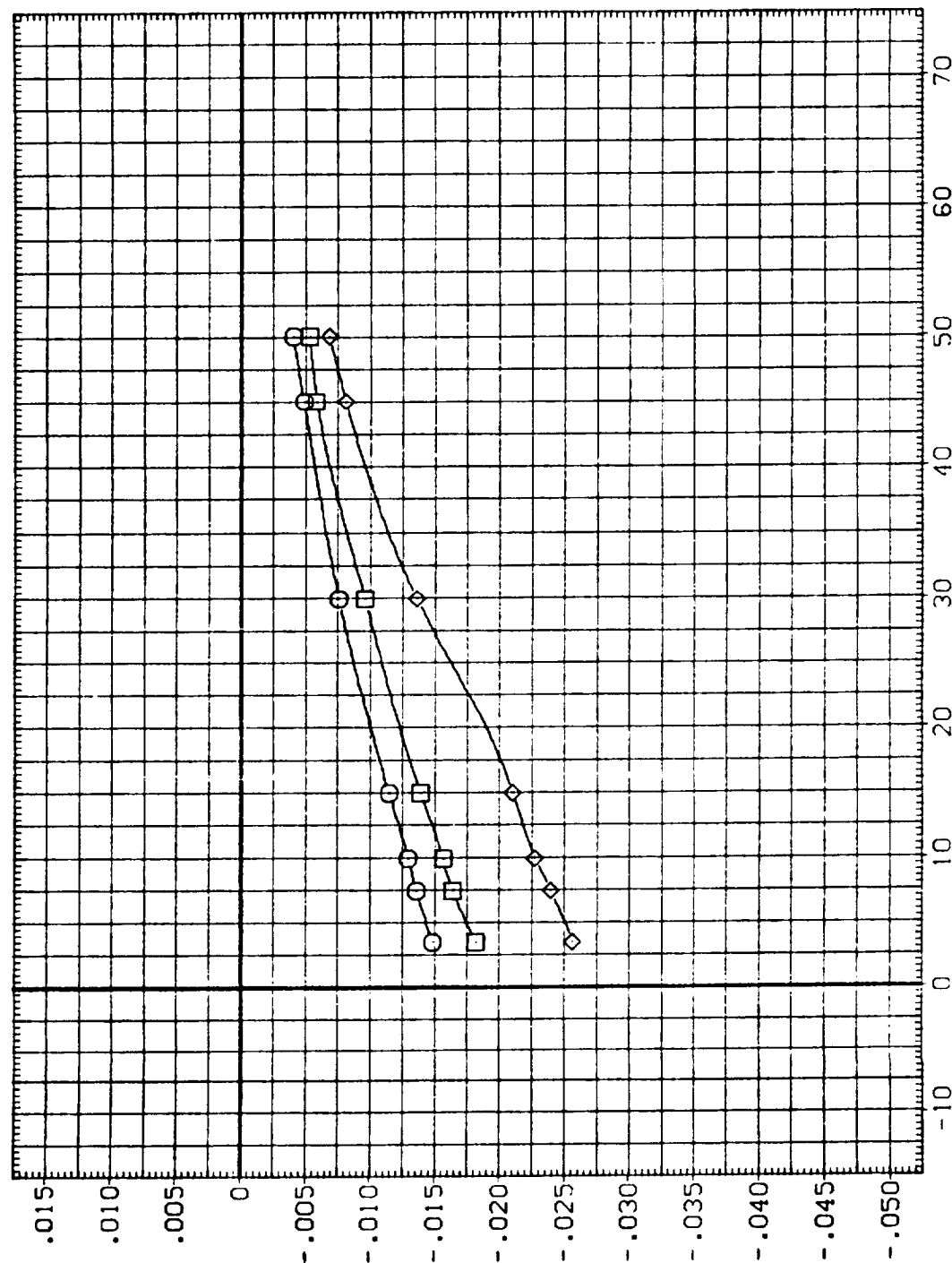


FIG. 7 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)

DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORB    ELEVON    MACH    STAB    REFERENCE INFORMATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH011)	ARC 14-120(CA23B) 747/1 AT1 025 (ORBITER DATA)	4.000	5.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH008)	ARC 14-120(CA23B) 747/1 AT1 025 (ORBITER DATA)	6.000	5.000	.600	-1.000	LREF 474.8100 IN.
(4NH009)	ARC 14-120(CA23B) 747/1 AT1 025 (ORBITER DATA)	8.000	5.000	.600	-1.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

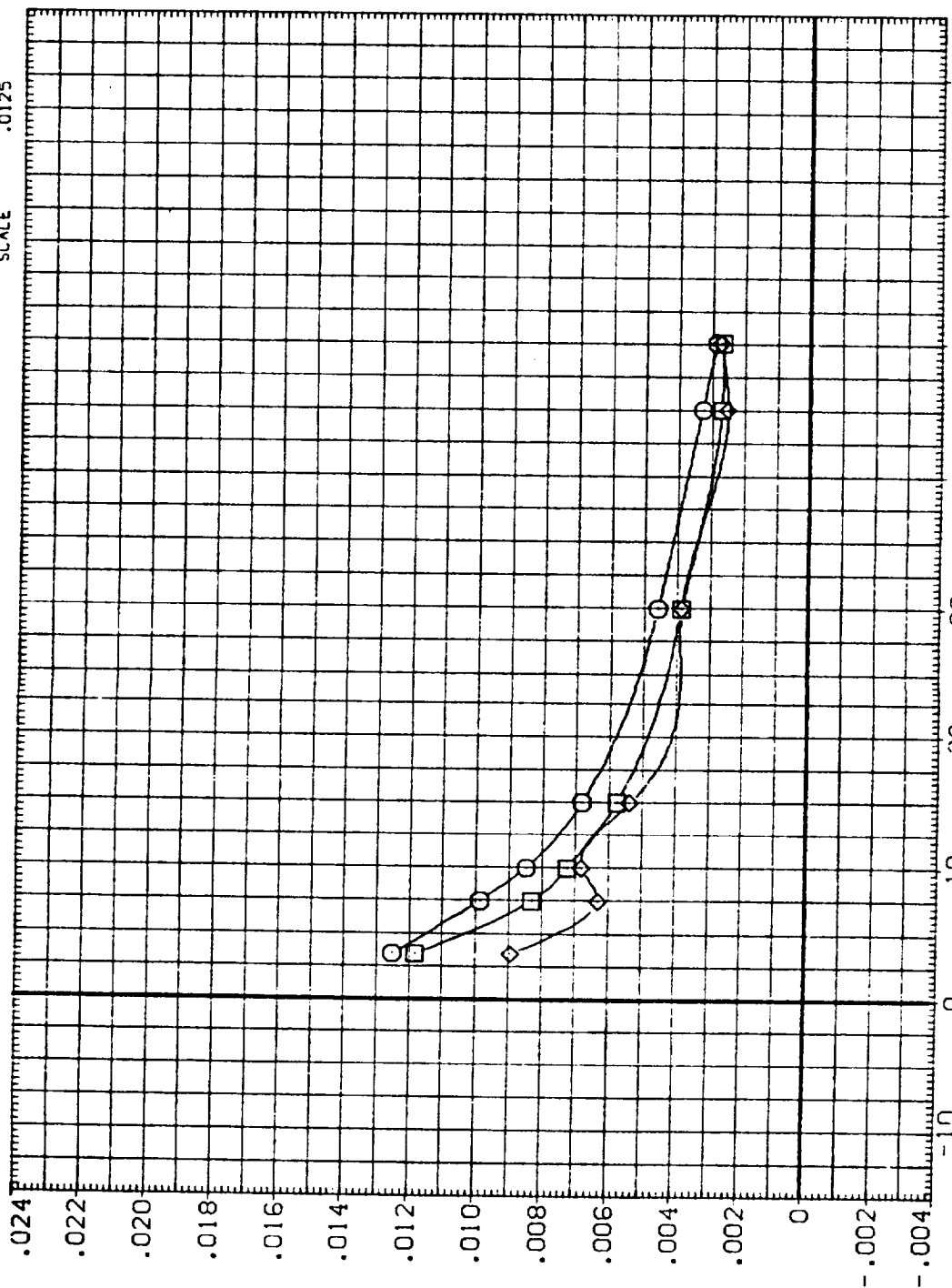
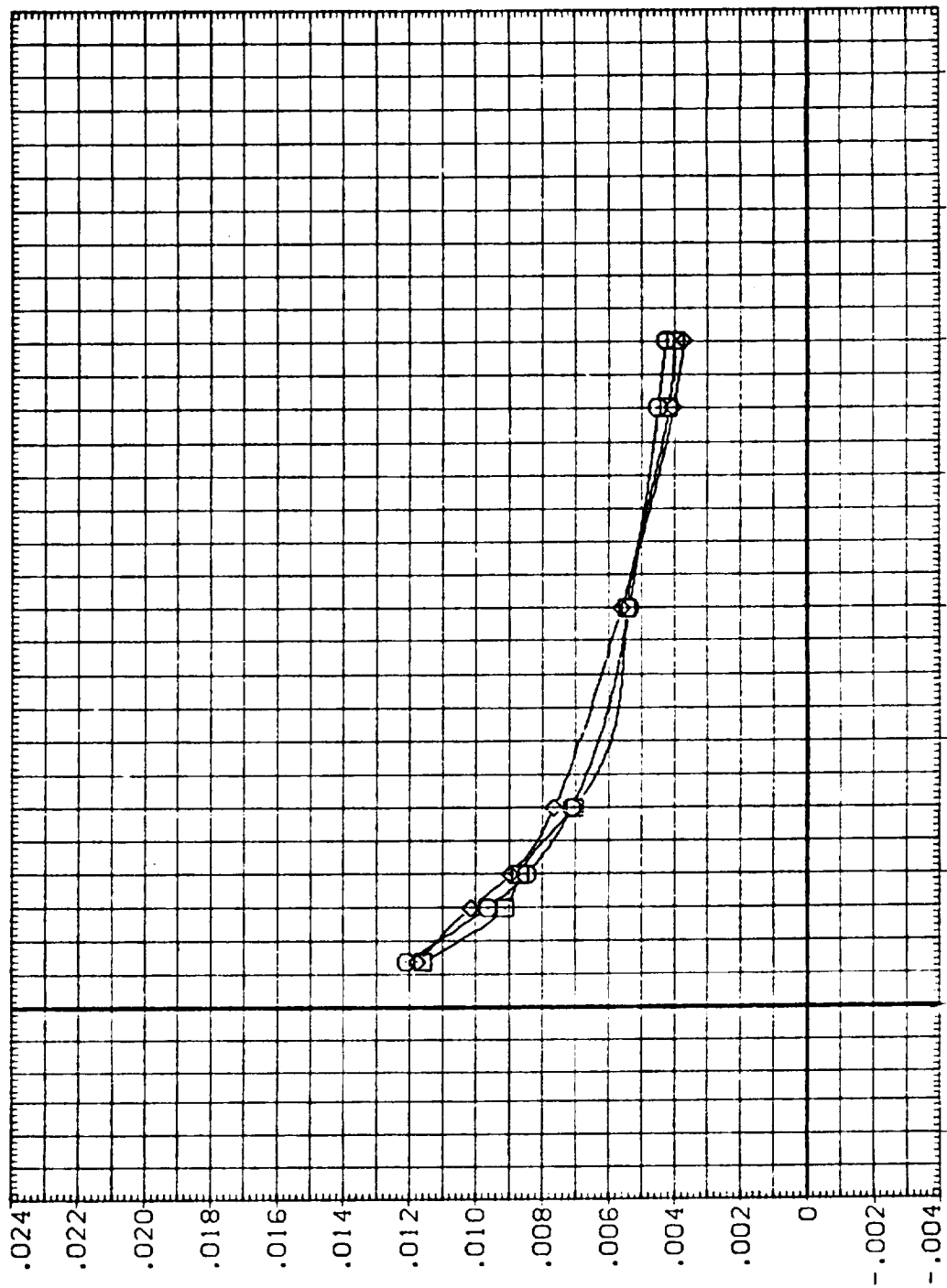


FIG. 7 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH011)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH008)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	-1.000	LREF 474.8100 IN.
(4NH009)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	8.000	5.000	.600	-1.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 7 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)  
 (B)ALPHAC= 2.00

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4N+011) ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB/ITER DATA)  
 (4N+008) ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB/ITER DATA)  
 (4N+009) ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB/ITER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 4.000 5.000 .600 -1.000 SREF 2630.0000 SQ.FT.  
 6.000 5.000 .600 -1.000 LREF 474.8100 IN.  
 8.000 5.000 .600 -1.000 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

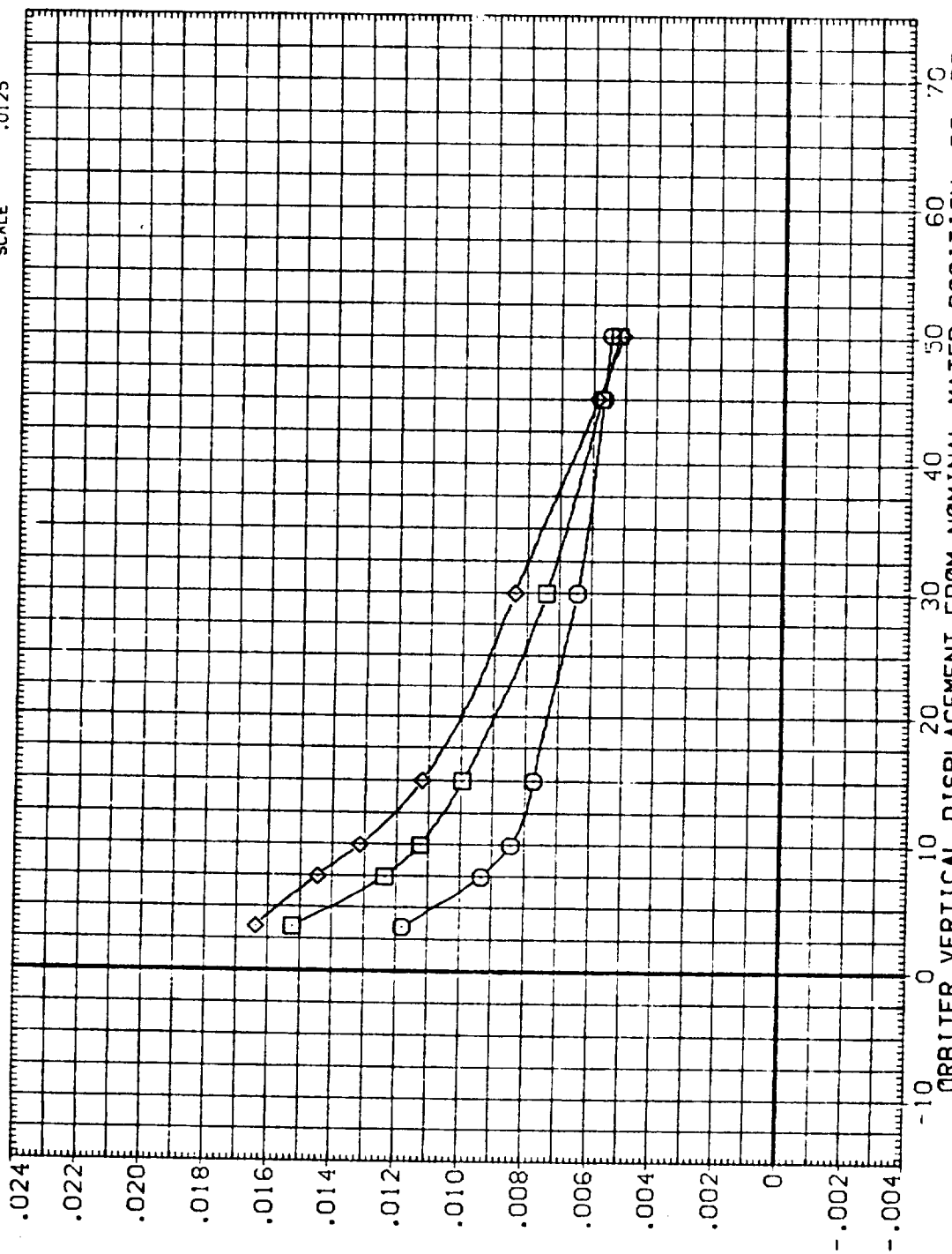


FIG. 7 EFFECT OF ORB INCIDENCE ON ORBITER(STAB=-1.0 DEG.,ORB T/C OFF,ELEVON=5)  
 (C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ICRB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(UNH42)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.300	5.000	SREF	5500.0000	50. FT.	
(UNH41)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.500	5.000	LREF	327.7800	IN.	
(UNH40)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	BREF	2348.0400	IN.	XC
						XMRP	1339.5000	IN.	YC
						YMRP	.0000	IN.	ZC
						ZMRP	190.7500	IN.	
						SCALE	.0125		

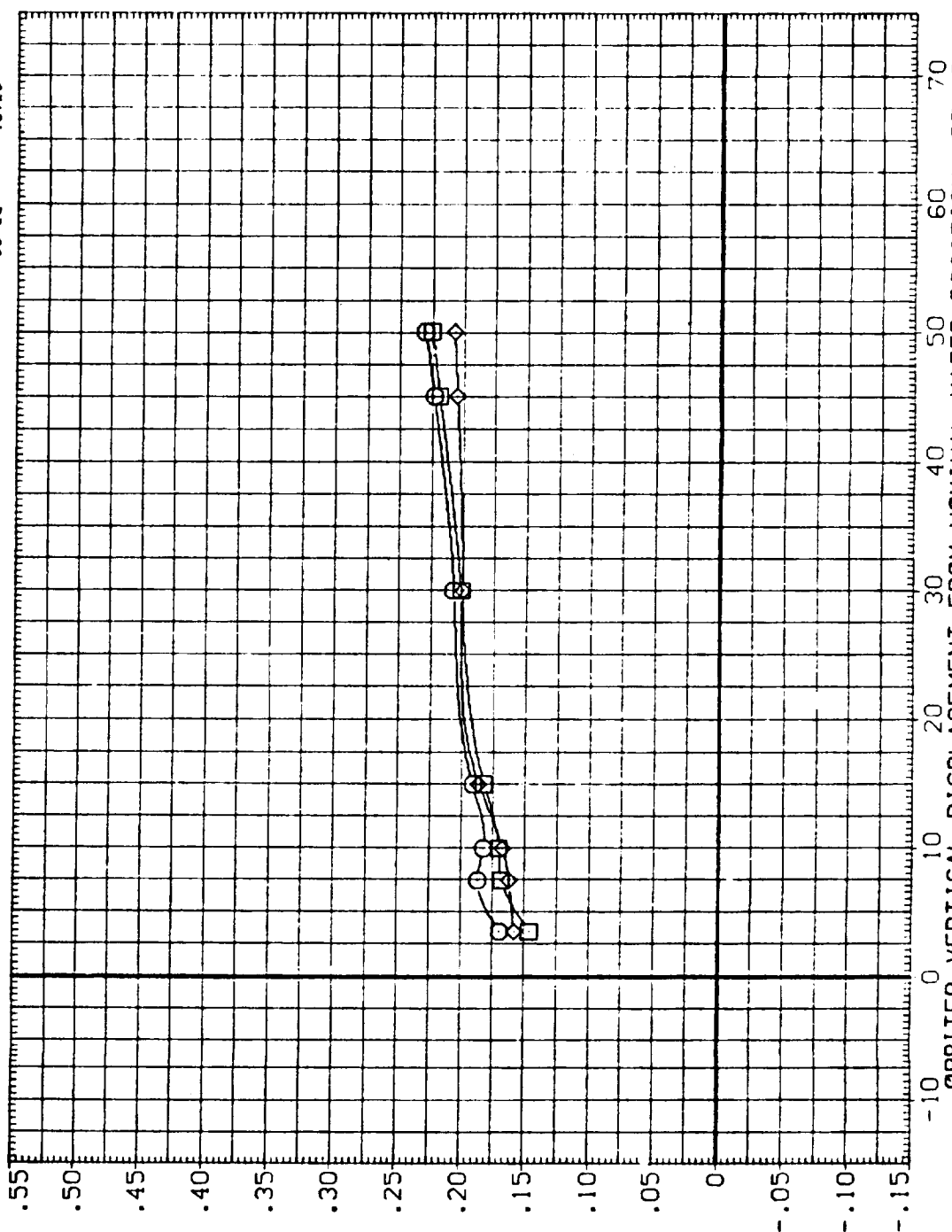


FIG. 8 EFFECT OF MACH NUMBER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(A)ALPHAC= 2.00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION

(UNHM42)    ARC 14-120(CA23B)    747/1    AT1    Q2S1 (CARRIER DATA)

(UNHM41)    ARC 14-120(CA23B)    747/1    AT1    Q2S1 (CARRIER DATA)

(UNHM40)    ARC 14-120(CA23B)    747/1    AT1    Q2S1 (CARRIER DATA)

IORB    ELEVON    MACH    STAB    REFERENCE INFORMATION

4.000    5.000    .300    5.000    SREF    5500.0000    50.FT.

4.000    5.000    .500    5.000    LREF    327.7800    IN.

4.000    5.000    .600    5.000    BREF    2348.0433    IN.

                                             XMRP    1339.9000    IN. XC

                                             YMRP    .0000    IN. YC

                                             ZMRP    190.7500    IN. ZC

                                             SCALE    .0125

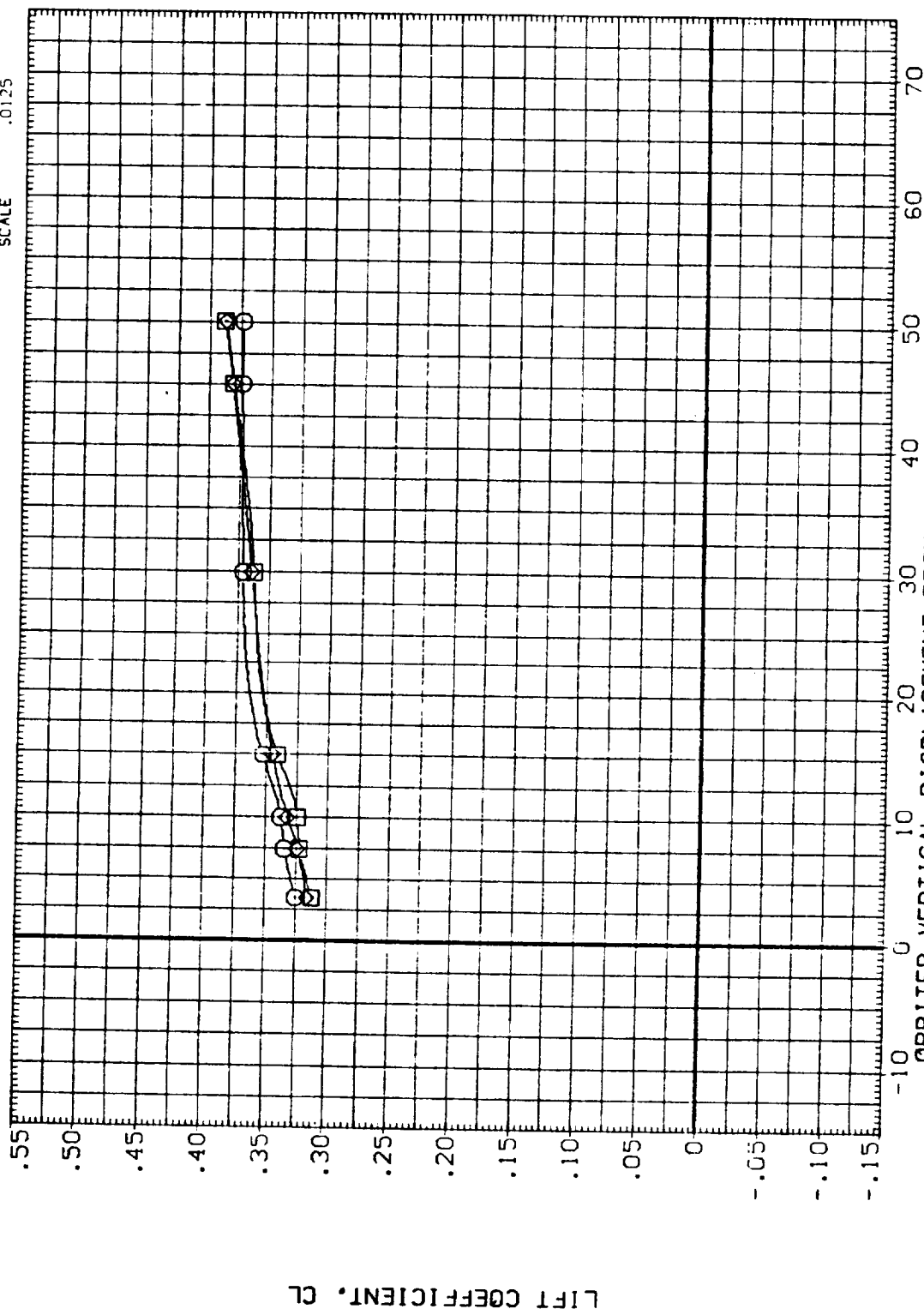


FIG. 8 EFFECT OF MACH NUMBER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(UNHM42)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.300	5.000	SREF	5500.0000	50. FT.	
(UNHM41)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.500	5.000	LREF	327.7800	IN.	
(UNHM40)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	5.000	BREF	2348.0400	IN.	XC
						XMRP	1339.9000	IN.	YC
						YMRP	.0000	IN.	YC
						ZMRP	190.7500	IN	ZC
						SCALE	.0125		

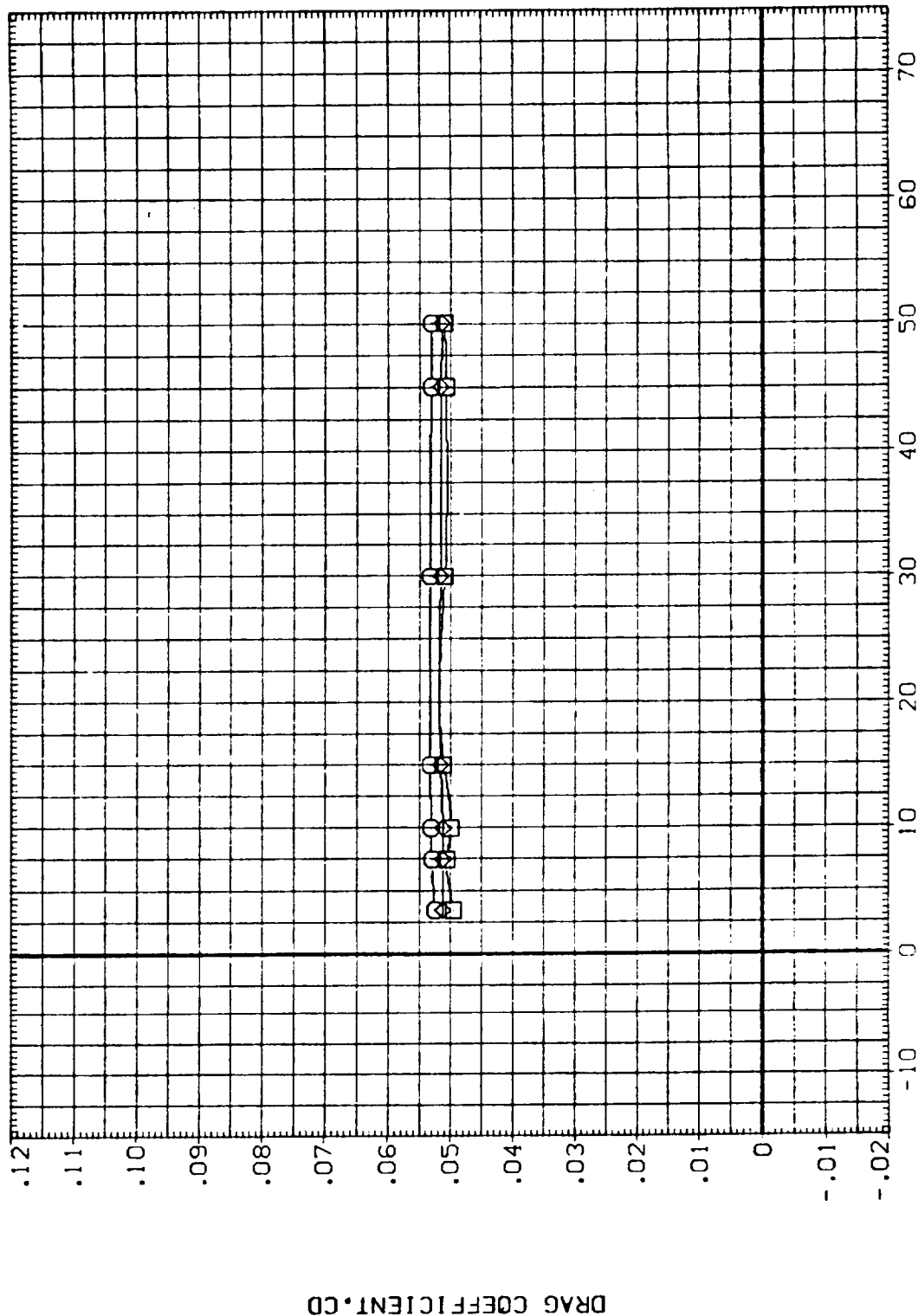


FIG. 8 EFFECT OF MACH NUMBER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(A)ALPHAC= 2.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(UNHM42)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.300	5.000	SREF 5500.0000 SQ.FT.
(UNHM41)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.500	5.000	LREF 327.7800 IN.
(UNHM40)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

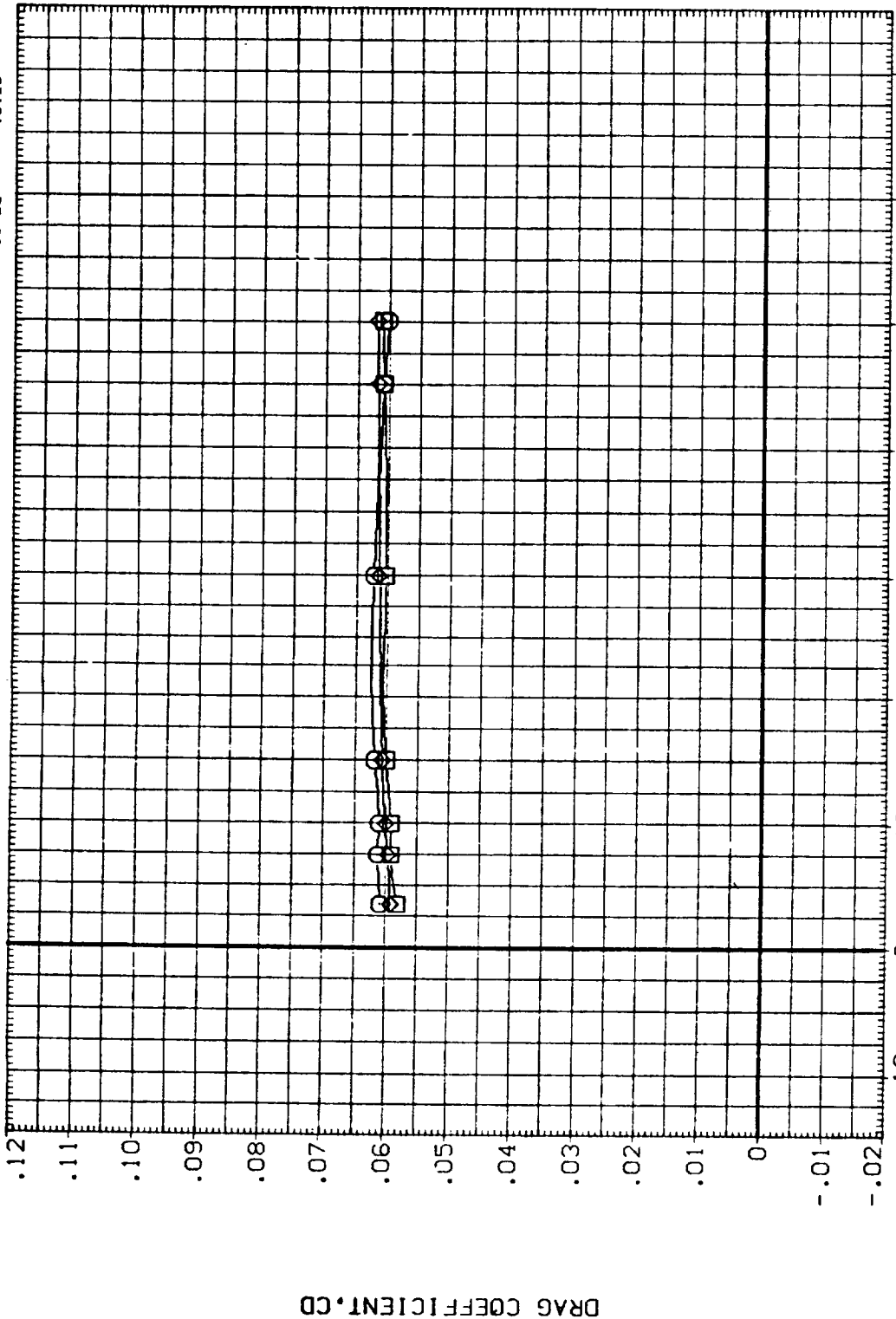
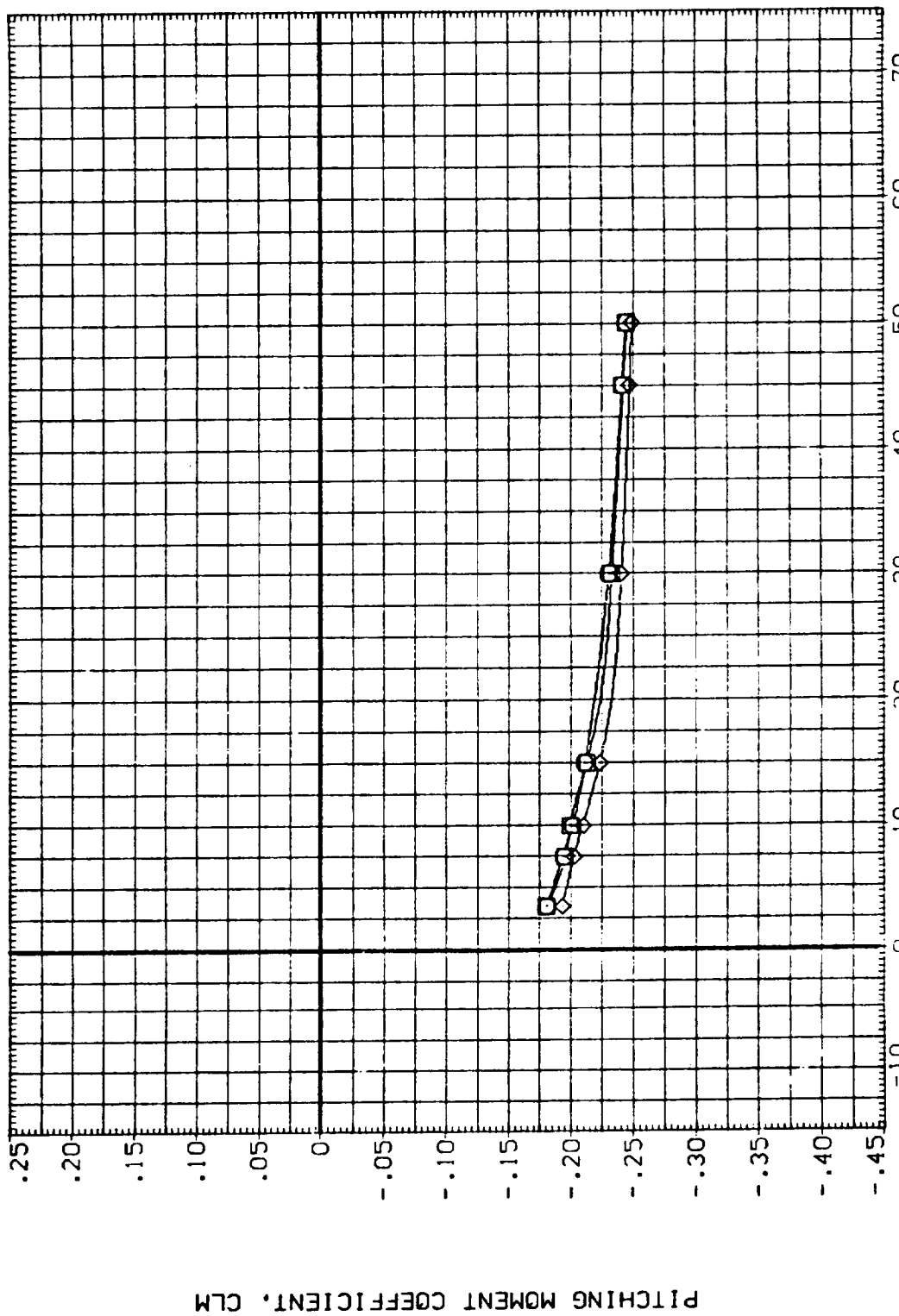


FIG. 8 EFFECT OF MACH NUMBER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION		
(UNHM42)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.300	5.000	SREF	5500.0000	50. FT.
(UNHM41)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.500	5.000	LREF	327.7800	IN.
(UNHM40)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	5.000	BREF	2348.0400	IN.
						XMRP	1339.9000	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0125	



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ. FT.

FIG. 8 EFFECT OF MACH NUMBER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(A)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (UNHM42) ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)  
 (UNHM41) ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)  
 (UNHM40) ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 4.000 5.000 .300 5.000 SREF 5500.0000 SQ.FT.  
 4.000 5.000 .500 5.000 LREF 327.7800 IN.  
 4.000 5.000 .600 5.000 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XG  
 YMRP .0000 IN. YG  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

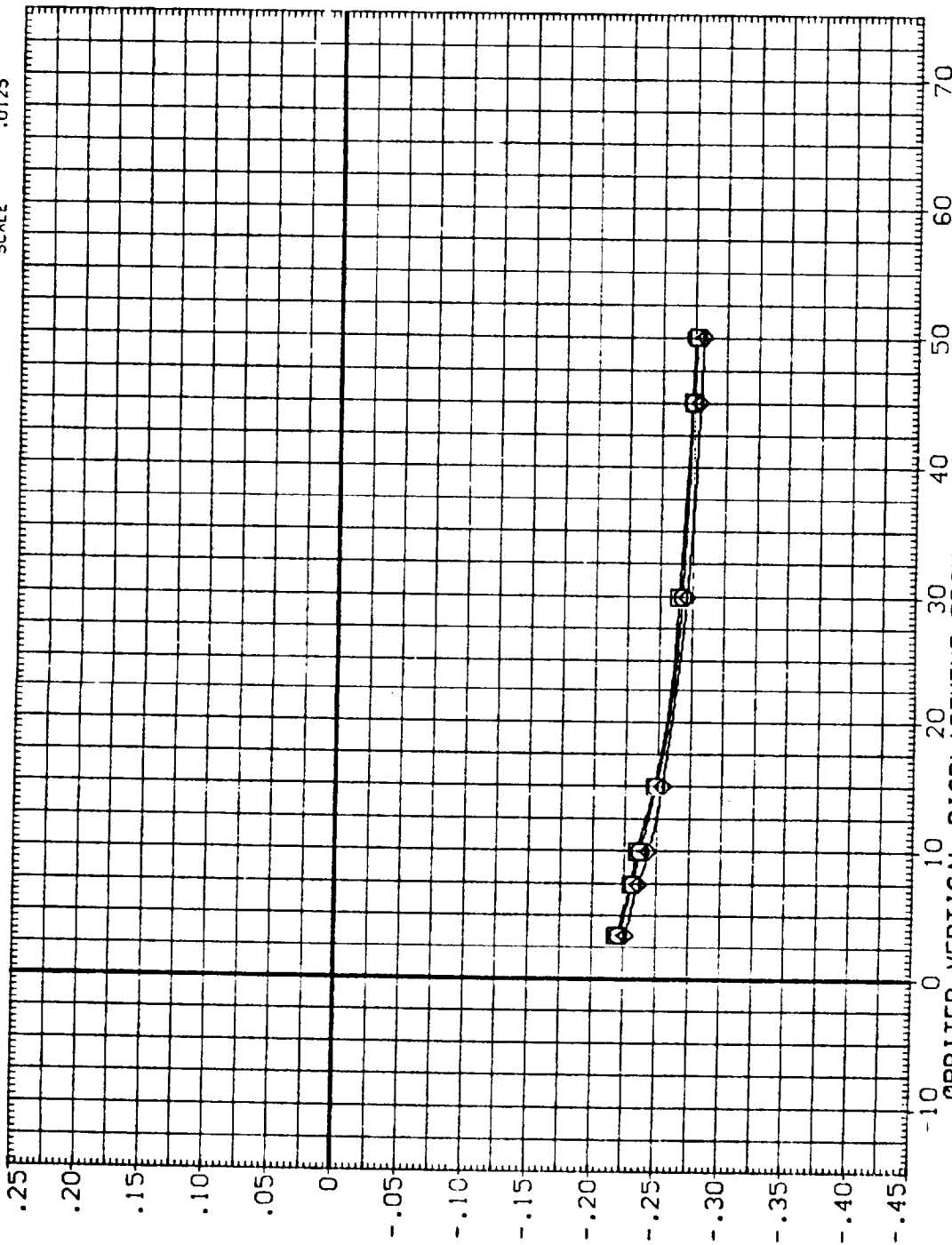


FIG. 8 EFFECT OF MACH NUMBER ON CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(VNM42)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	5.000	.300	5.000	SREF	2690.0000	SQ.FT.	
(VNM41)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	5.000	.500	5.000	LREF	474.8100	IN.	
(VNM40)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	5.000	.600	5.000	BREF	936.6800	IN.	X0
						XMRP	1109.0000	IN.	Y0
						ZMRP	375.0000	IN.	Z0
						SCALE	.0125		

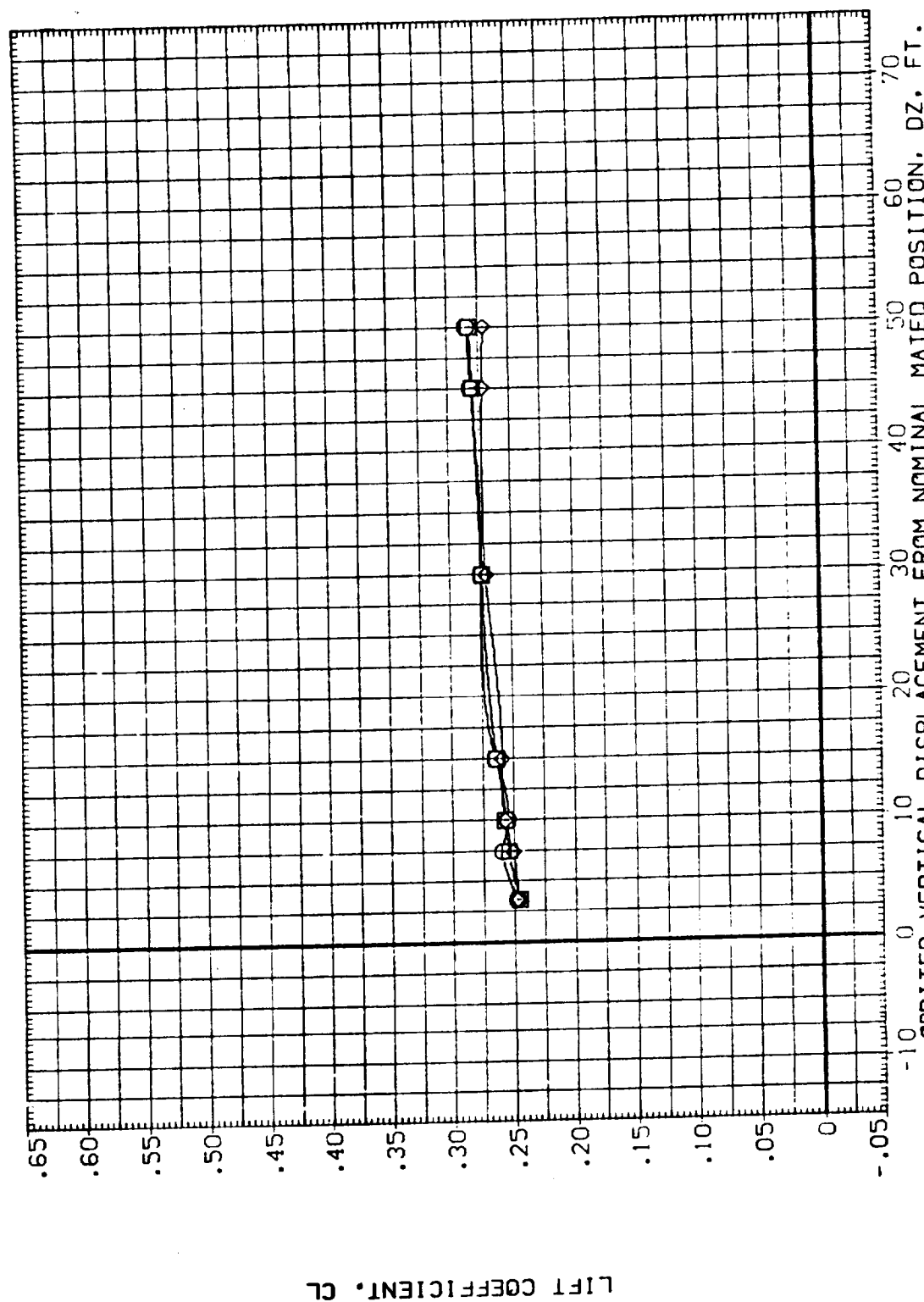


FIG. 9 EFFECT OF MACH NUMBER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
(A)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (VNHM42) ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)  
 (VNHM41) ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)  
 (VNHM40) ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 4.000 5.000 5.000 5.000 SREF 2690.0000 SQ.FT.  
 4.000 5.000 5.000 5.000 LREF 474.8100 IN.  
 4.000 5.000 5.000 5.000 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP 375.0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

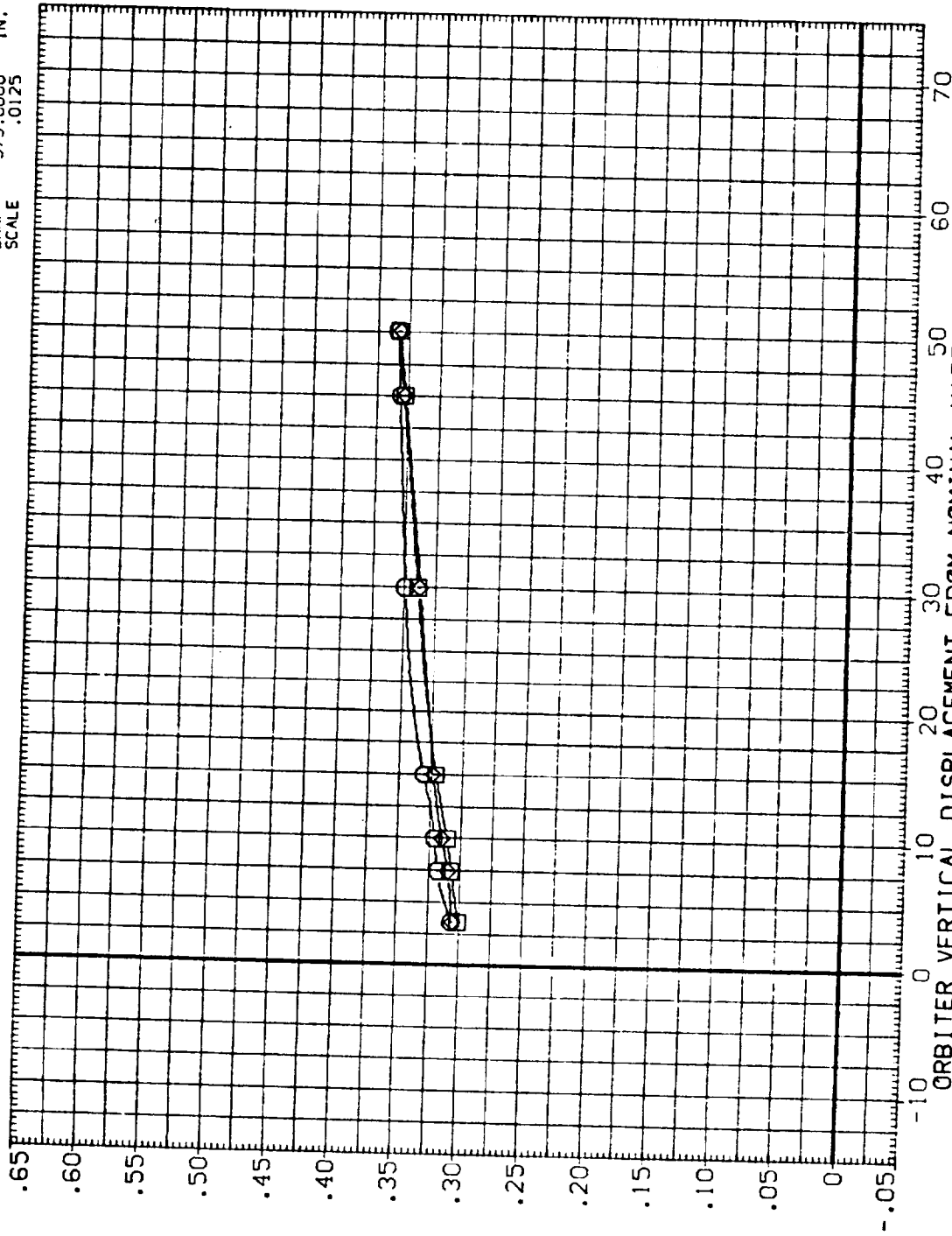


FIG. 9 EFFECT OF MACH NUMBER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(VNM42)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.300	5.000	SREF 2690.0000 SQ.FT.
(VNM41)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.500	5.000	LREF 474.8100 IN.
(VNM40)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	5.000	BREF 936.6800 IN.
						YMRP 1109.0000 IN. X8
						ZMRP .0000 IN. Y8
						ZMRP 375.0000 IN. Z8
						SCALE .0125

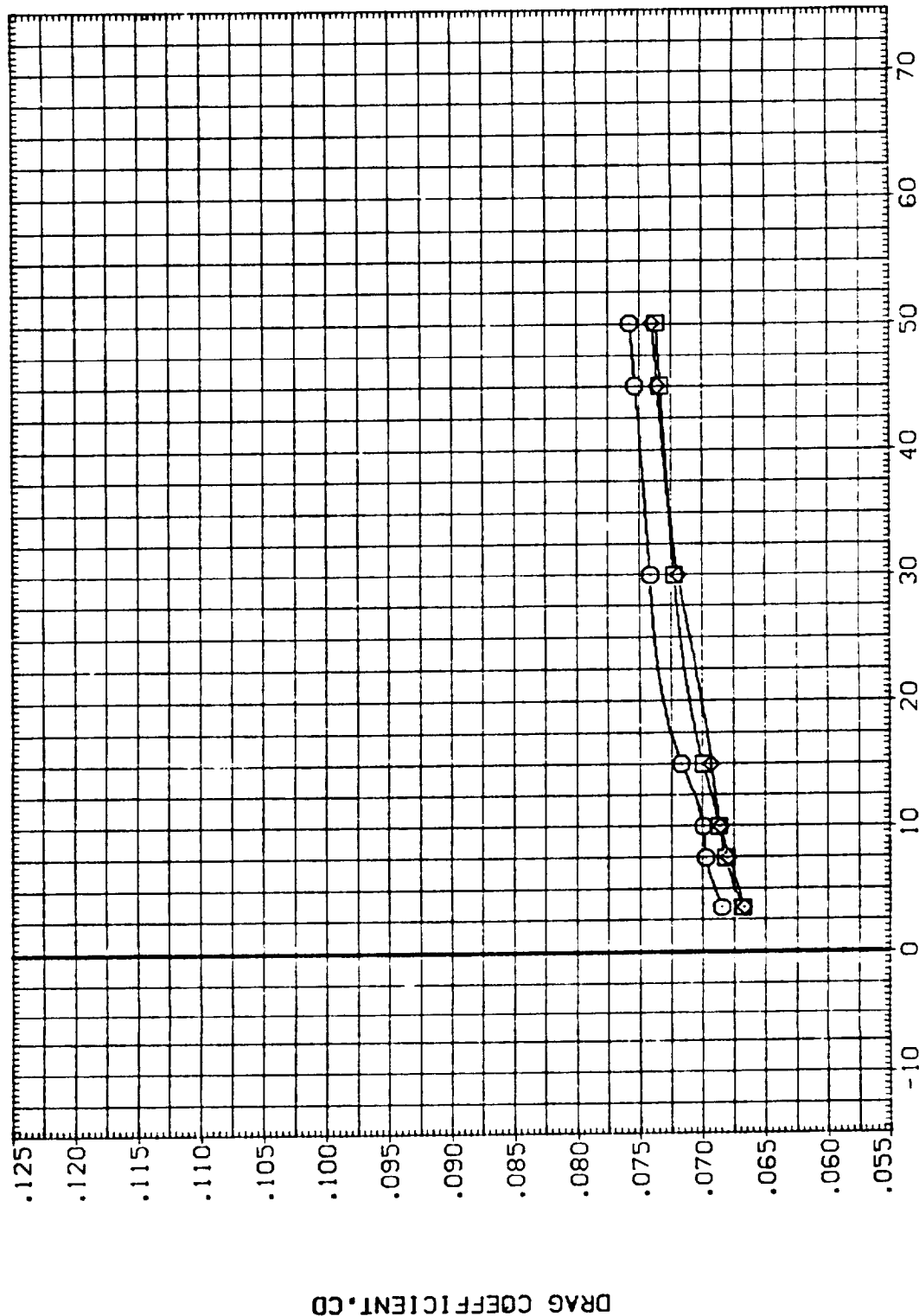


FIG. 9 EFFECT OF MACH NUMBER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(VNH42)	ARC 14-120(CA238)	4.000	5.000	.300	5.000	SREF 2690.0000 SQ.FT.
(VNH41)	ARC 14-120(CA238)	4.000	5.000	.300	5.000	LREF 474.8100 IN.
(VNH40)	ARC 14-120(CA238)	4.000	5.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

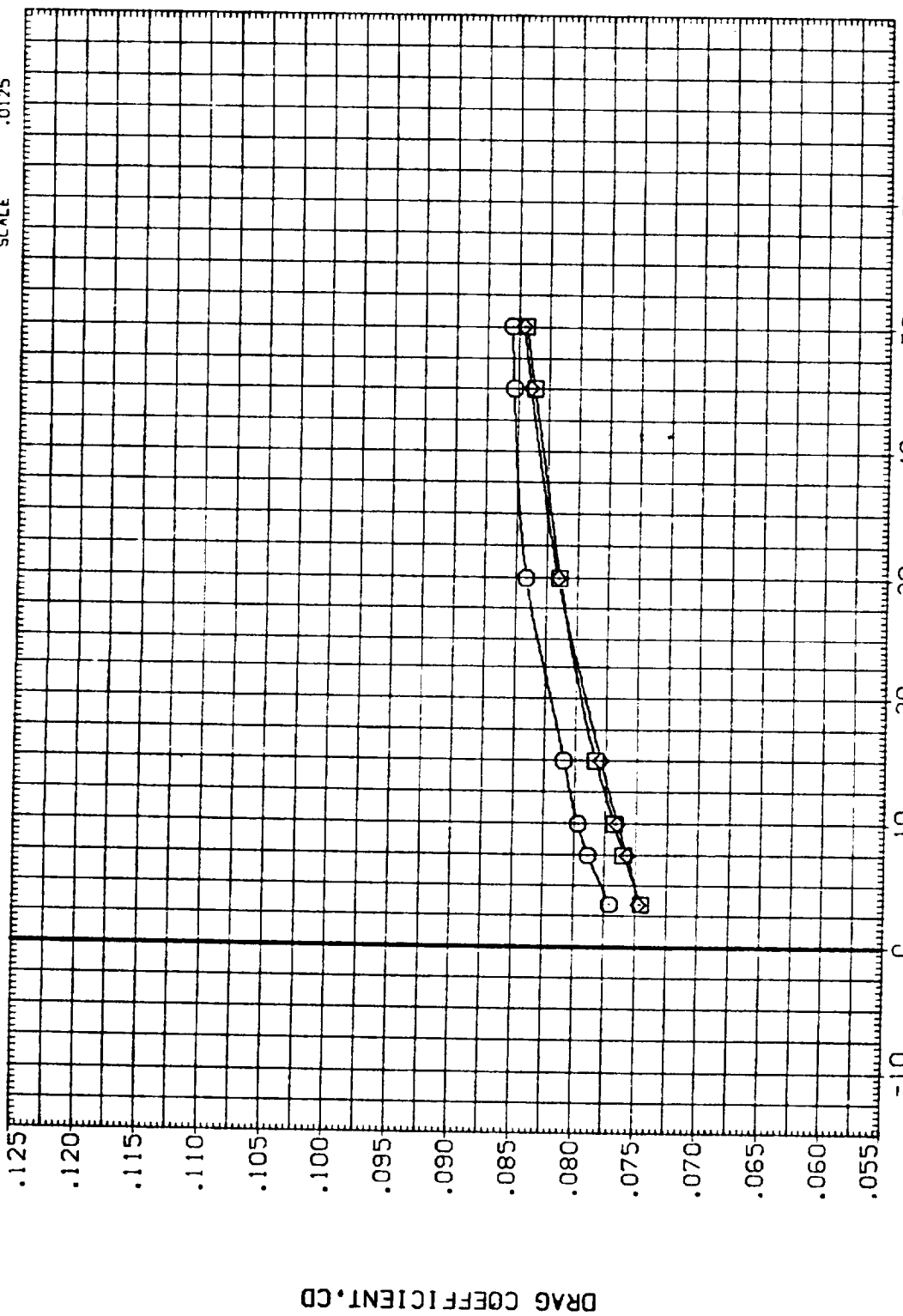


FIG. 9 EFFECT OF MACH NUMBER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB 1/C OFF)  
 (B)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(VNH42)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	5.000	.300	5.000	SREF 2690.0000 SQ.FT.
(VNH41)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	5.000	.500	5.000	LREF 474.8100 IN.
(VNH40)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	5.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

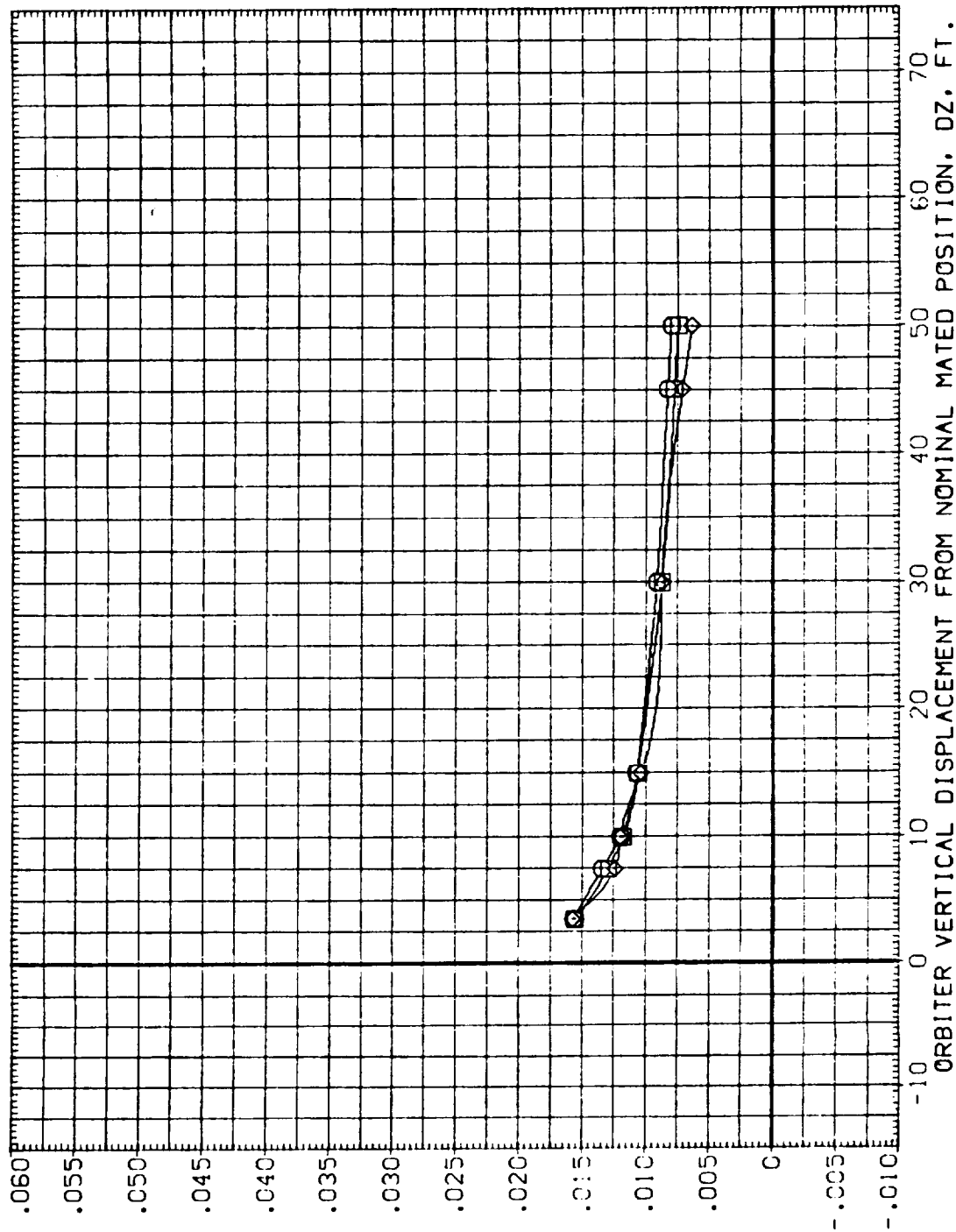


FIG. 9 EFFECT OF MACH NUMBER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
(A)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(VNH42)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.300	5.000	SREF 2690.0000 50. FT.
(VNH41)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.500	5.000	LREF 474.8100 IN.
(VNH40)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

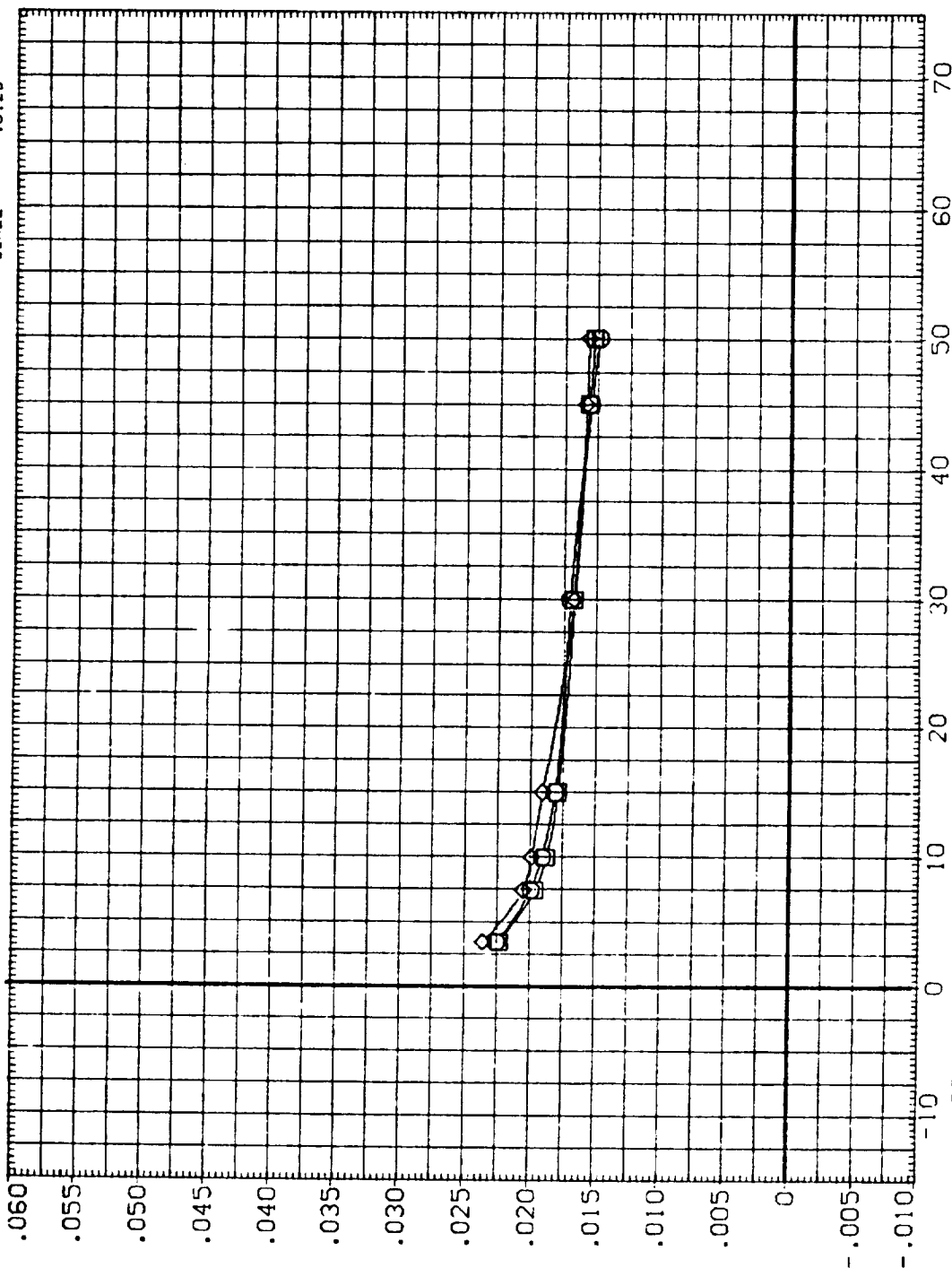


FIG. 9 EFFECT OF MACH NUMBER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA23B)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH023)	ARC 14-120(CA23B)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH022)	ARC 14-120(CA23B)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

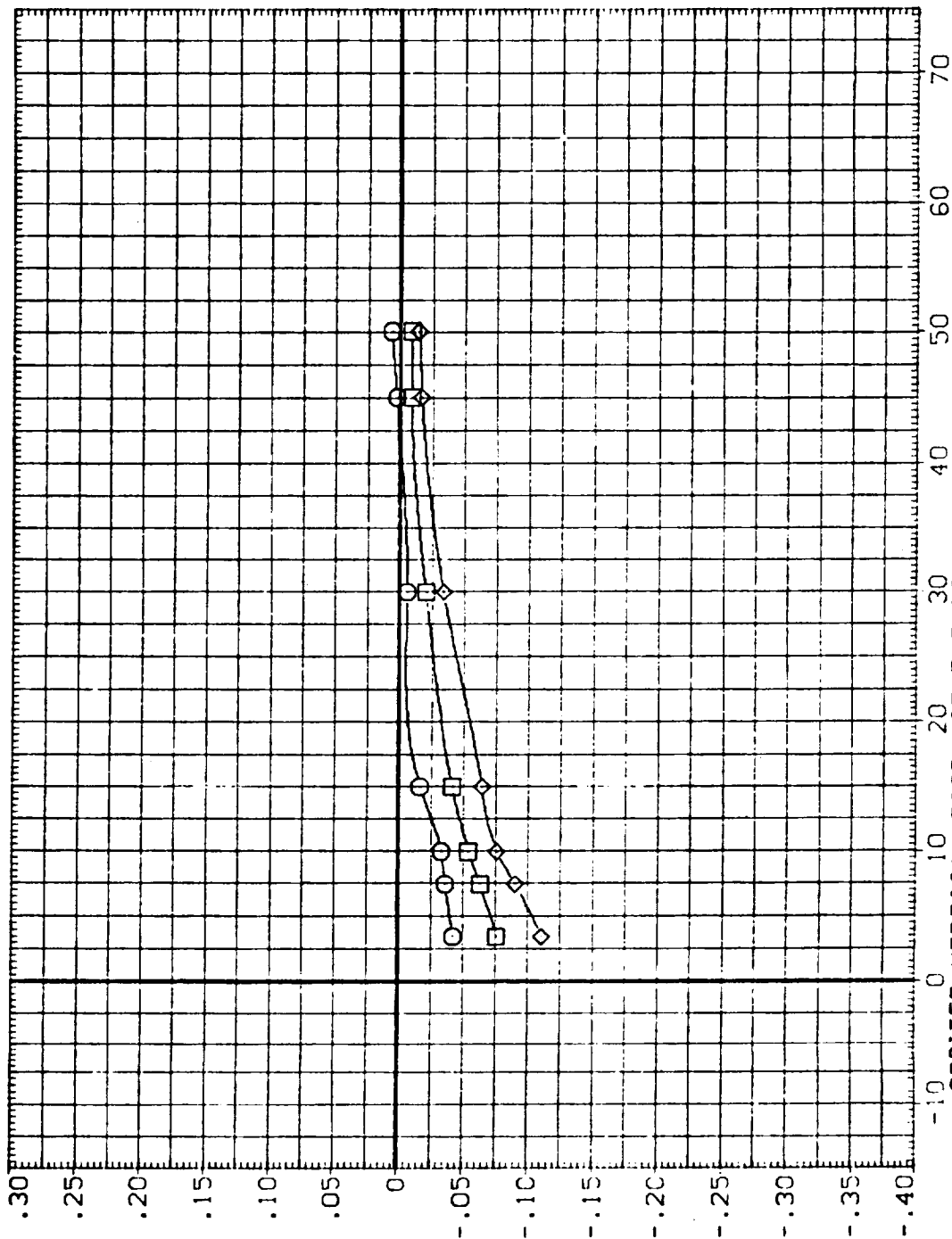


FIG. 10 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)

(A)ALPHAC= .00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORB    ELEVON    MACH    STAB    REFERENCE INFORMATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.5000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

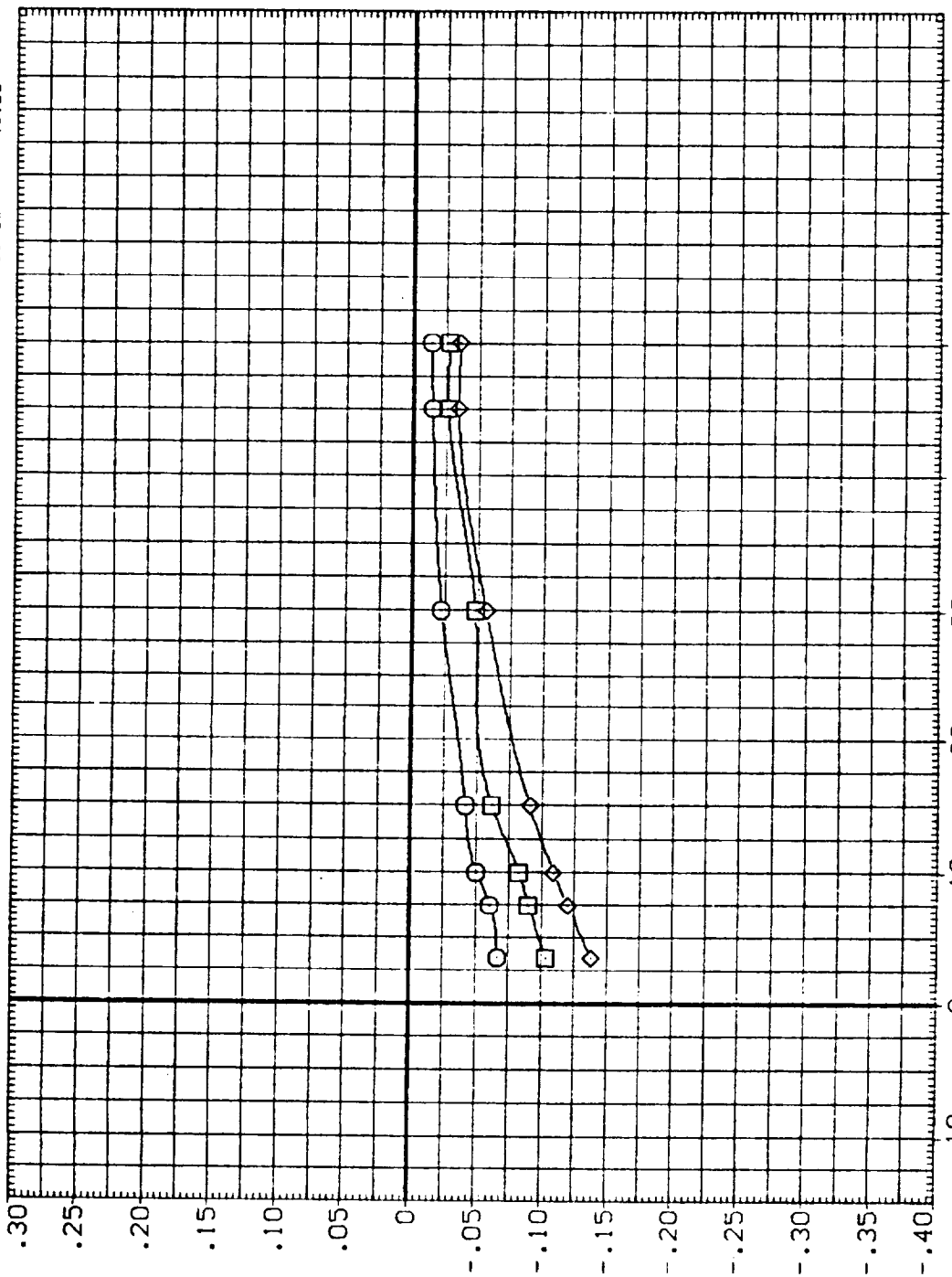


FIG. 10 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						YMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

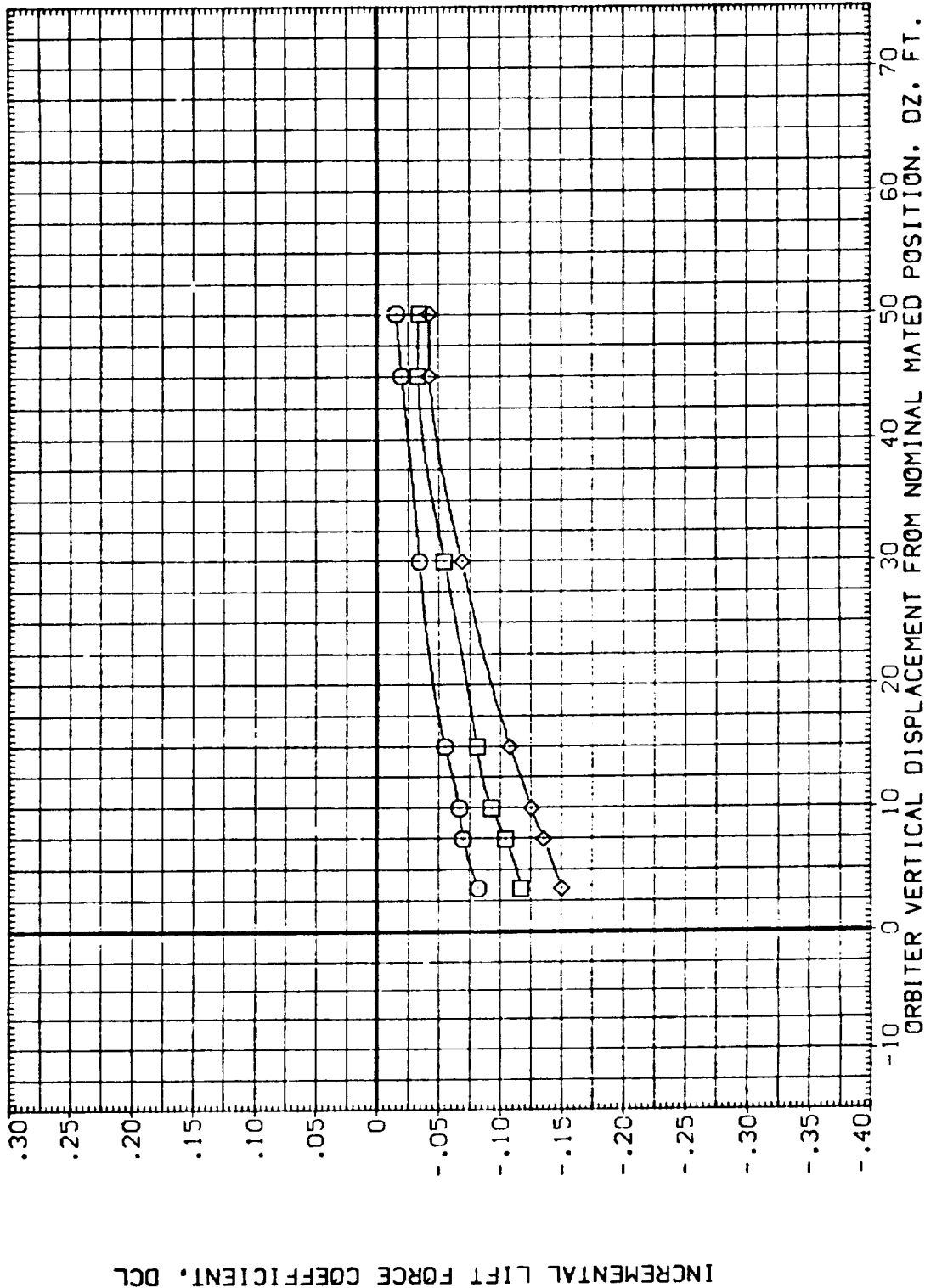


FIG. 10 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNH020) ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
 (PNH023) ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
 (PNH022) ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION:  
 4.000 .000 .600 5.000 SREF 5500.0000 SQ.FT.  
 6.000 .000 .600 5.000 LREF 327.7800 IN.  
 8.000 .000 .600 5.000 BRFP 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

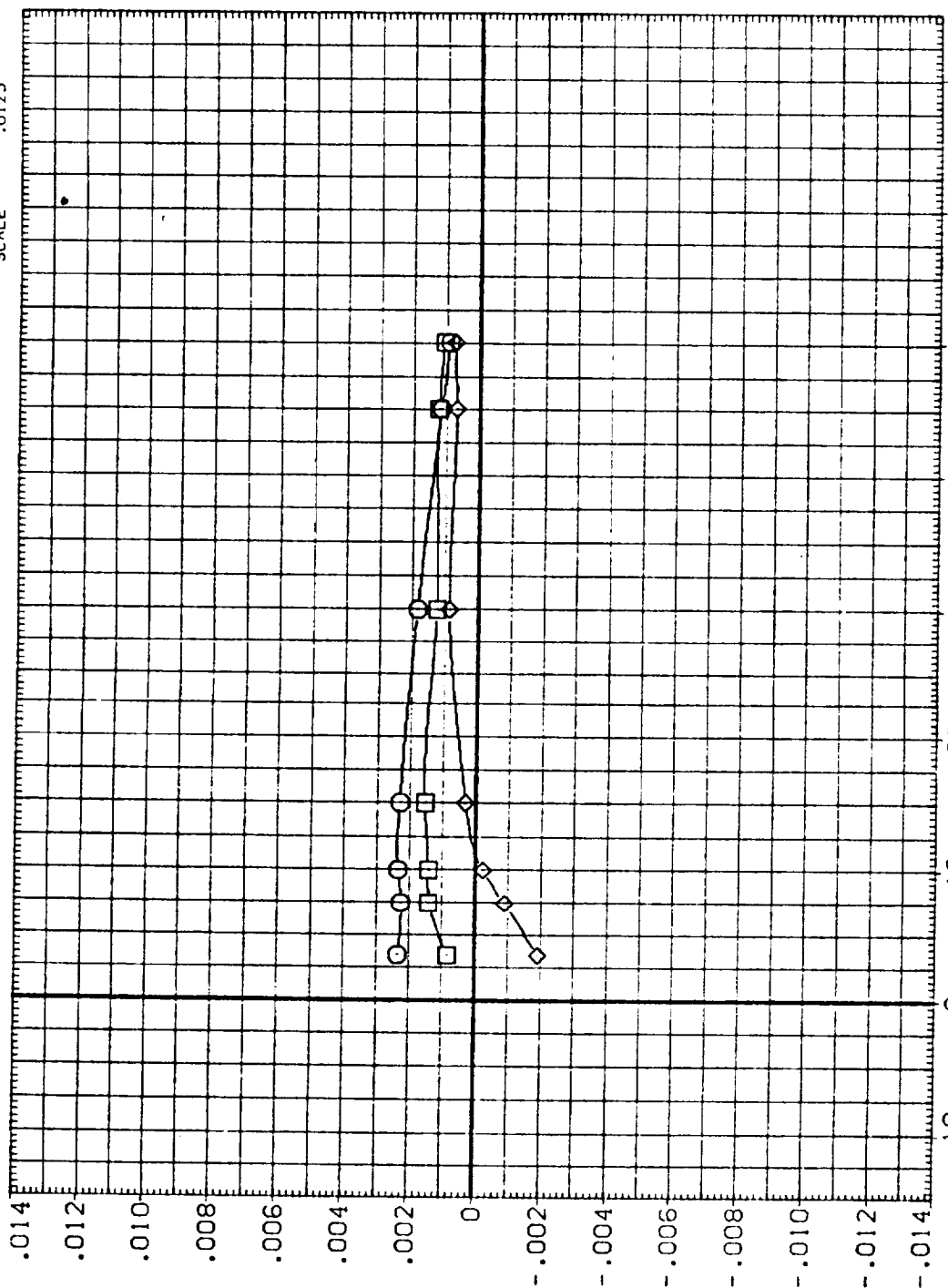


FIG. 10 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
 (A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SO.FT.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XREF 1339.9000 IN.
						YHRP .0000 IN.
						ZHRP 190.7500 IN.
						SCALE .0125

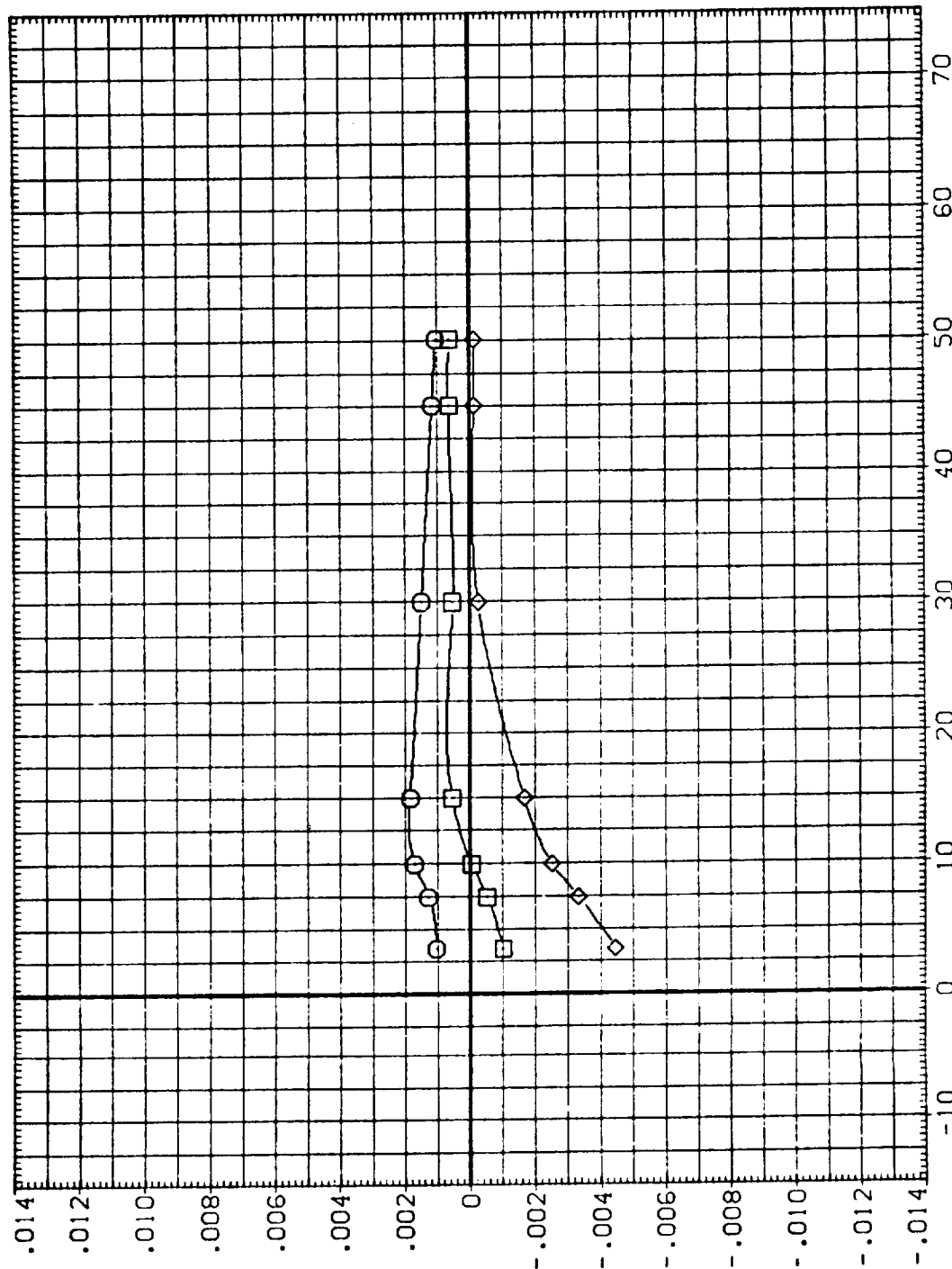


FIG. 10 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH022)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

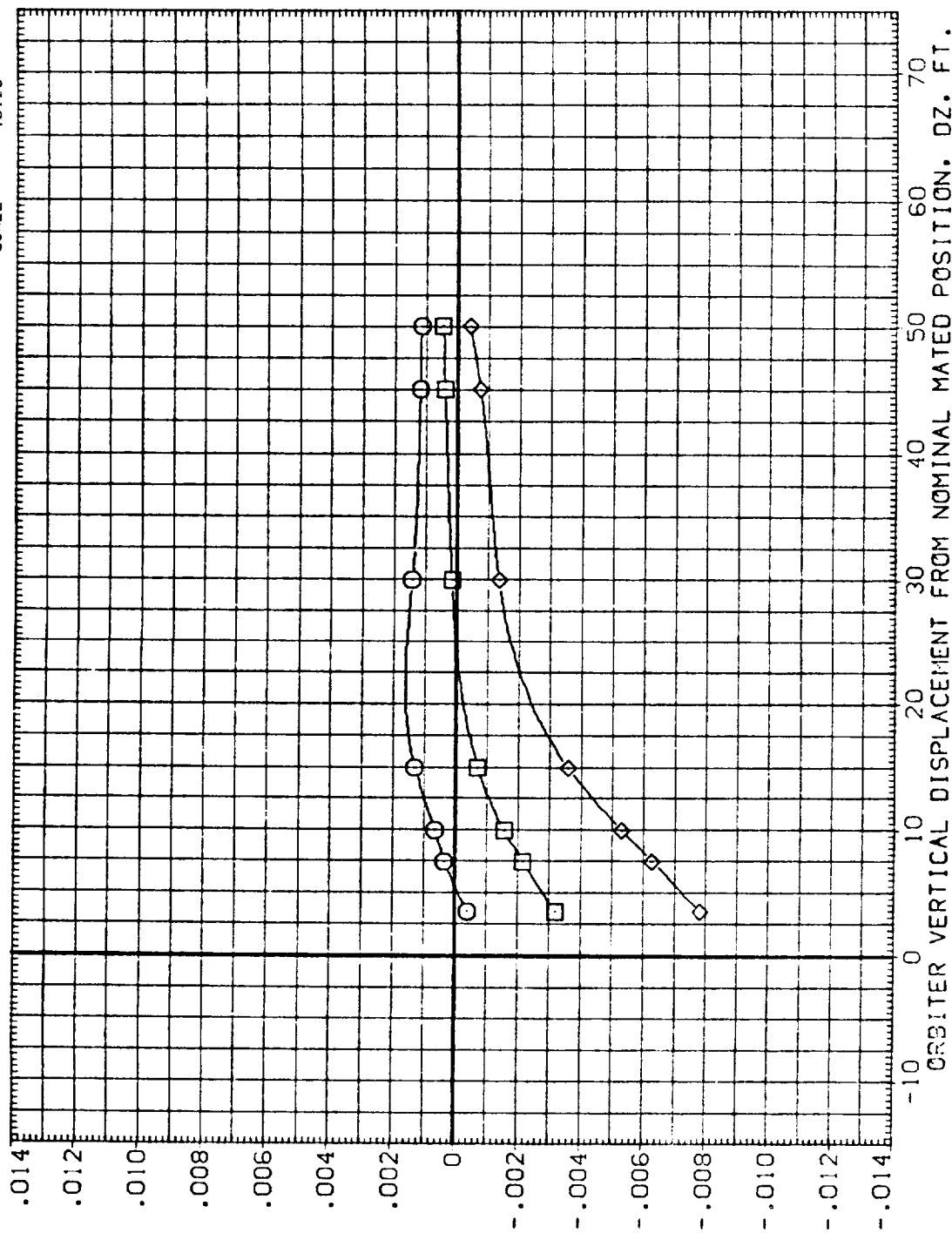
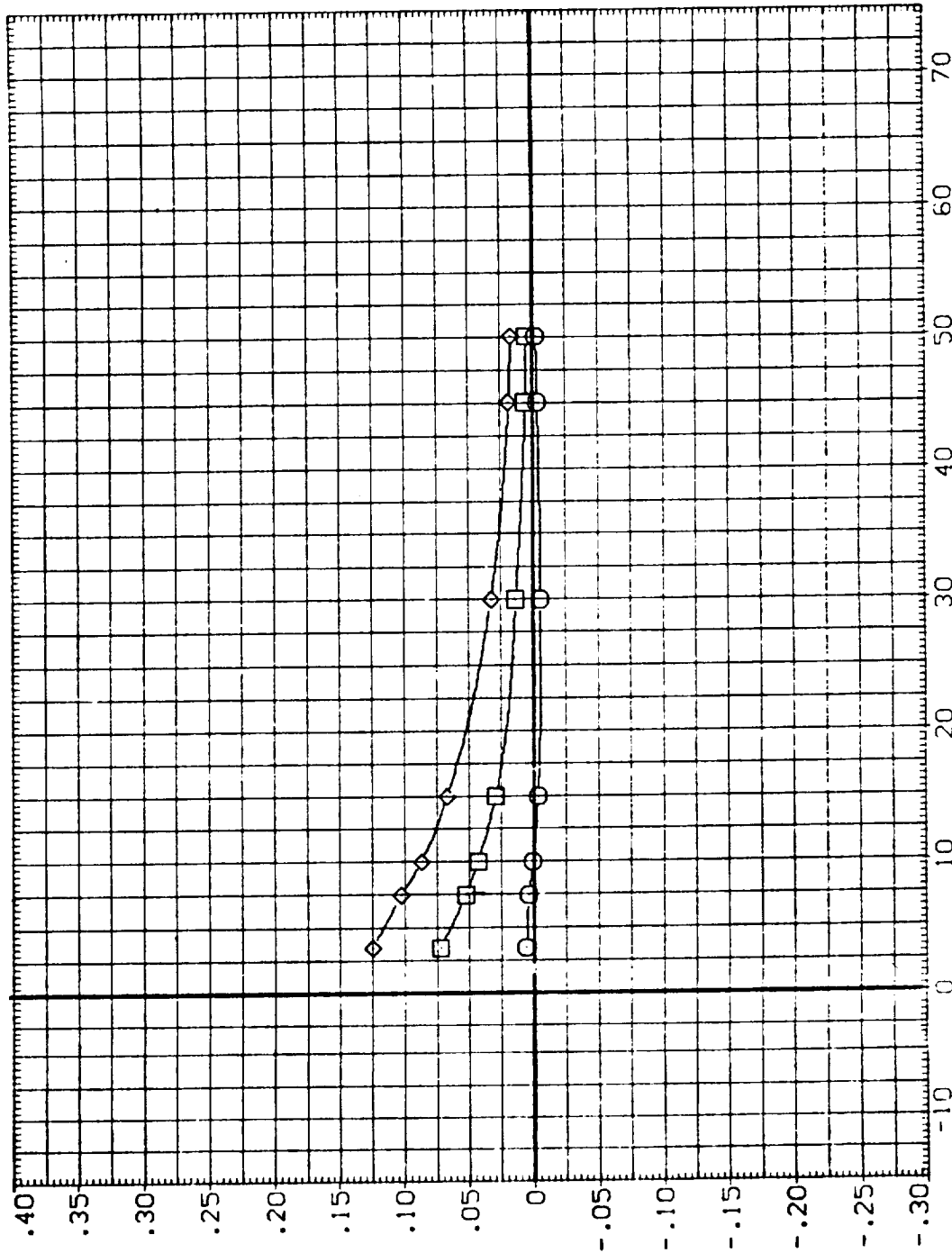


FIG. 10 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
(C)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PH020)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PH023)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PH022)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, OZ. FT.

FIG. 10 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(PNH020) ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA) 4.000 STAB 5.000 REF 5500.0000 50. FT.  
 (PNH023) ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA) 6.000 MACH .600 SREF 327.7800 IN.  
 (PNH022) ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA) 8.000 ELEVON .000 LREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

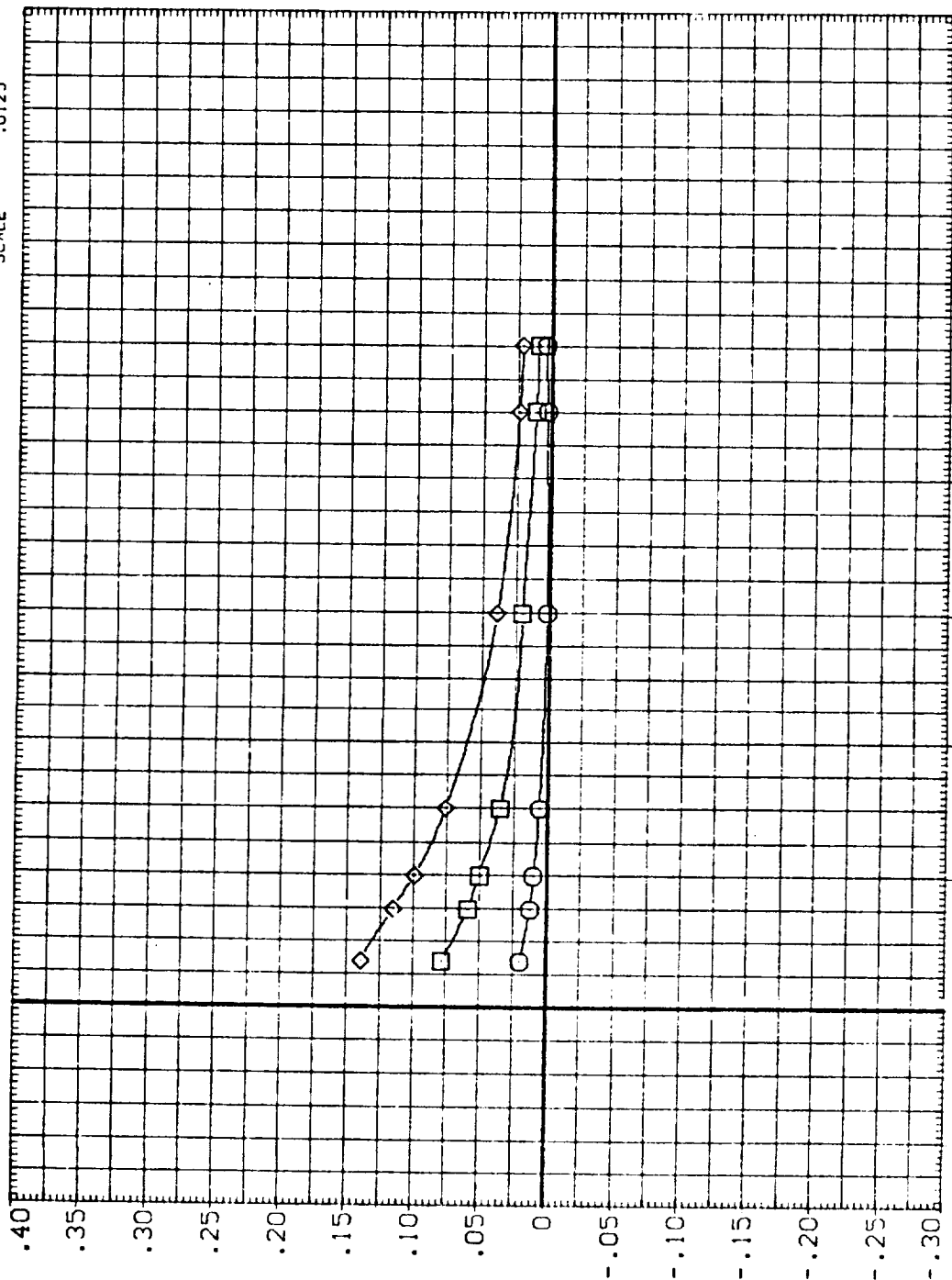


FIG. 10 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
 (B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION		
(PNH020)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	5.000	SREF	5500.0000	50.FT.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	LREF	327.7800	IN.
(PNH022)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	5.000	BREF	2348.0400	IN.
						XMRP	1339.9000	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0125	

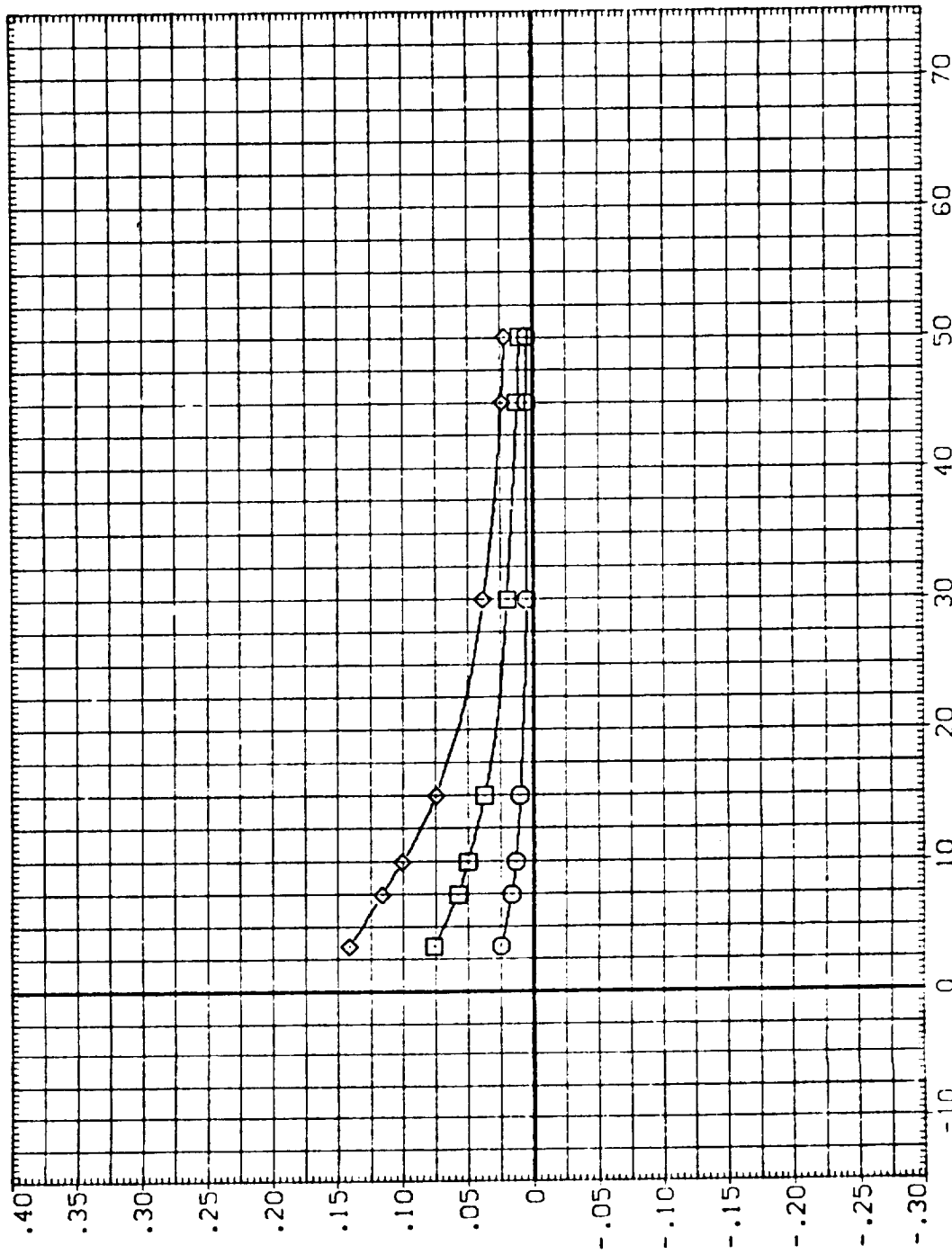


FIG. 10 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB 1/C OFF,ELEVON=0)  
 (C)ALPHAC= 4.00  
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INCREMENTAL LIFT FORCE COEFFICIENT, DCL

FIG. 11 EFFECT OF ORB INCIDENCE ON ORBITER( STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TO RB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH020)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH022)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

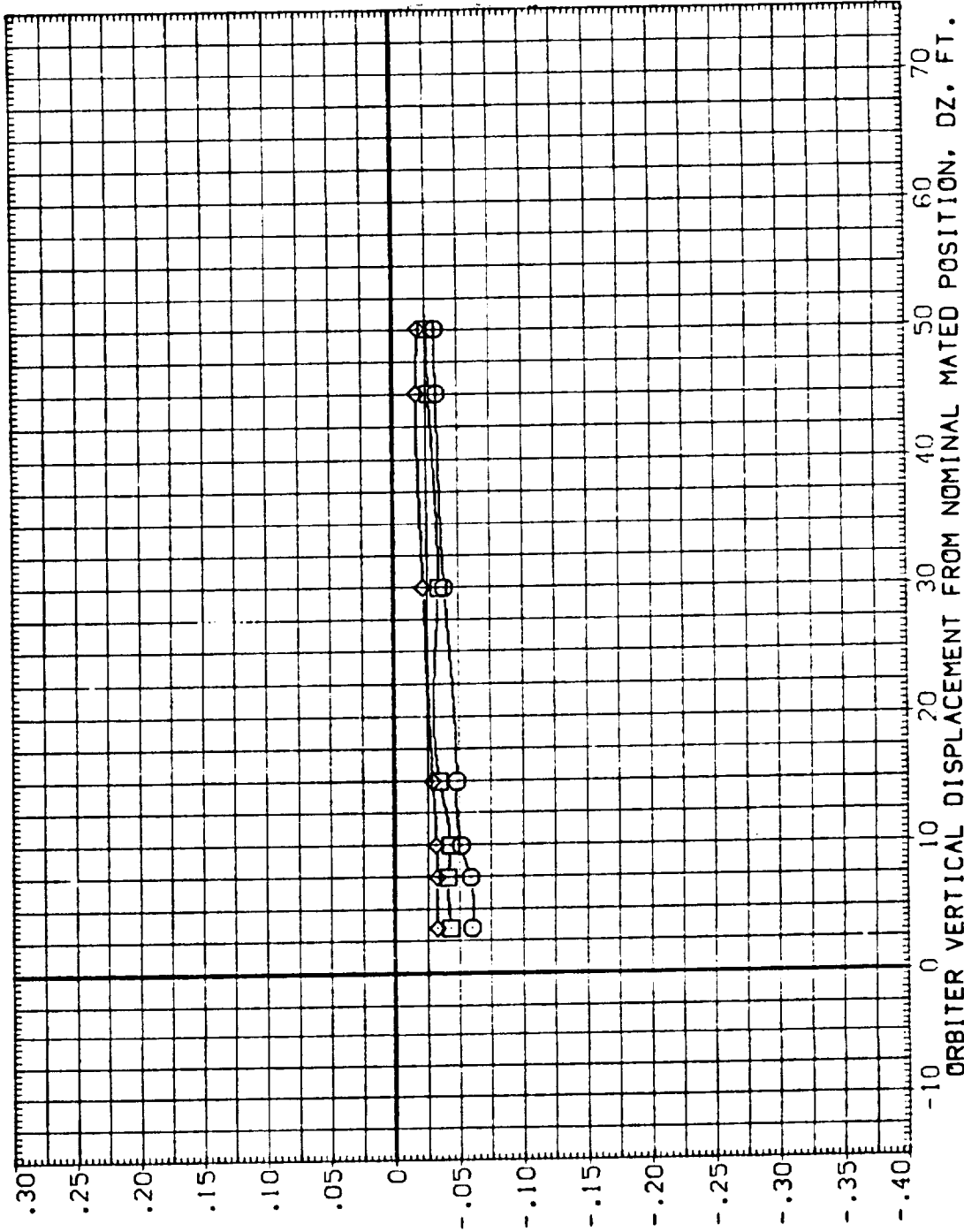


FIG. 11 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
(B)ALPHAC= 2.00

IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
4.0000	.000	.600	5.000	SREF	2690.0000 SQ.FT.
6.0000	.000	.600	5.000	LREF	474.8100 IN.
8.0000	.000	.600	5.000	BREF	936.6800 IN.
				XMRP	1109.0000 IN.
				YMRP	.0000 IN.
				ZMRP	375.0000 IN.
				SCALE	.0125 IN.

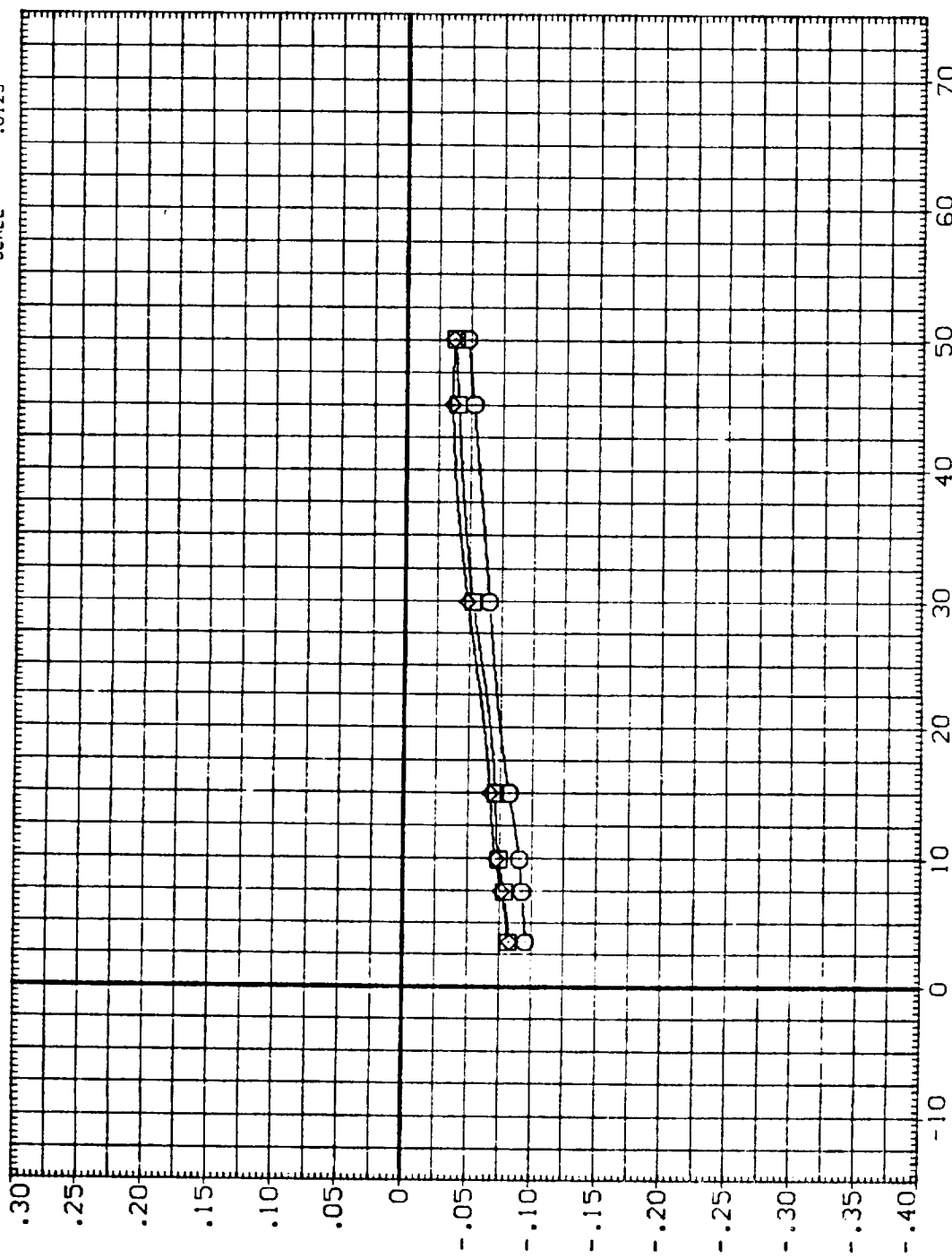


FIG. 11 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
(C)ALPHAC= 4.00

DATA SET SYMBOL  
(4NH020)  
(4NH023)  
(4NH022)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

IORB  
4.000  
6.000  
8.000

STAB  
5.000  
5.000  
5.000

ELEVON  
.000  
.000  
.000

MACH  
.600  
.600  
.600

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. X0  
ZMRP 375.0000 IN. X0  
SCALE .0125

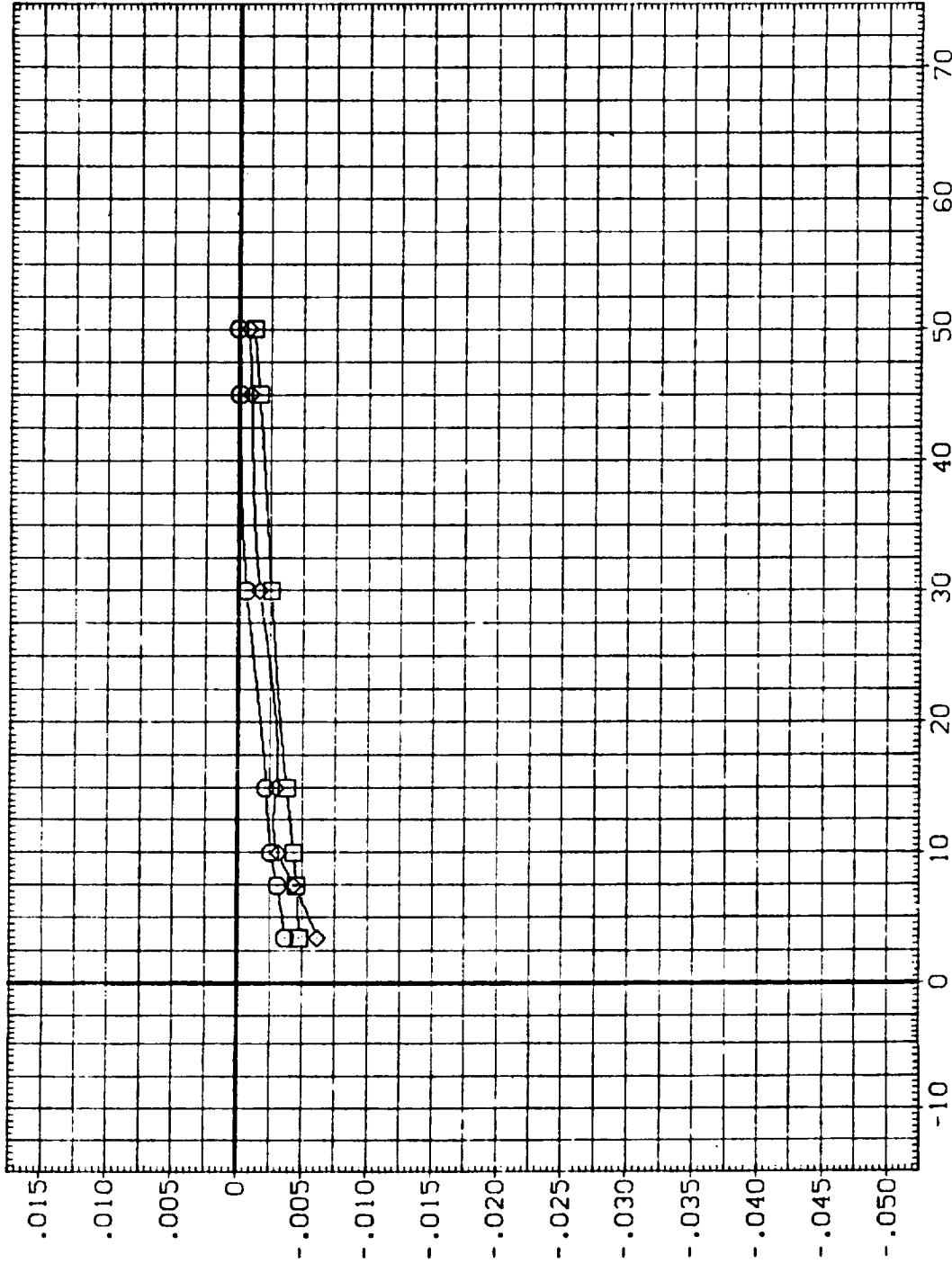


FIG. 11 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
(A)ALPHAC= .00





DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4N+020)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4N+023)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
(4N+022)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

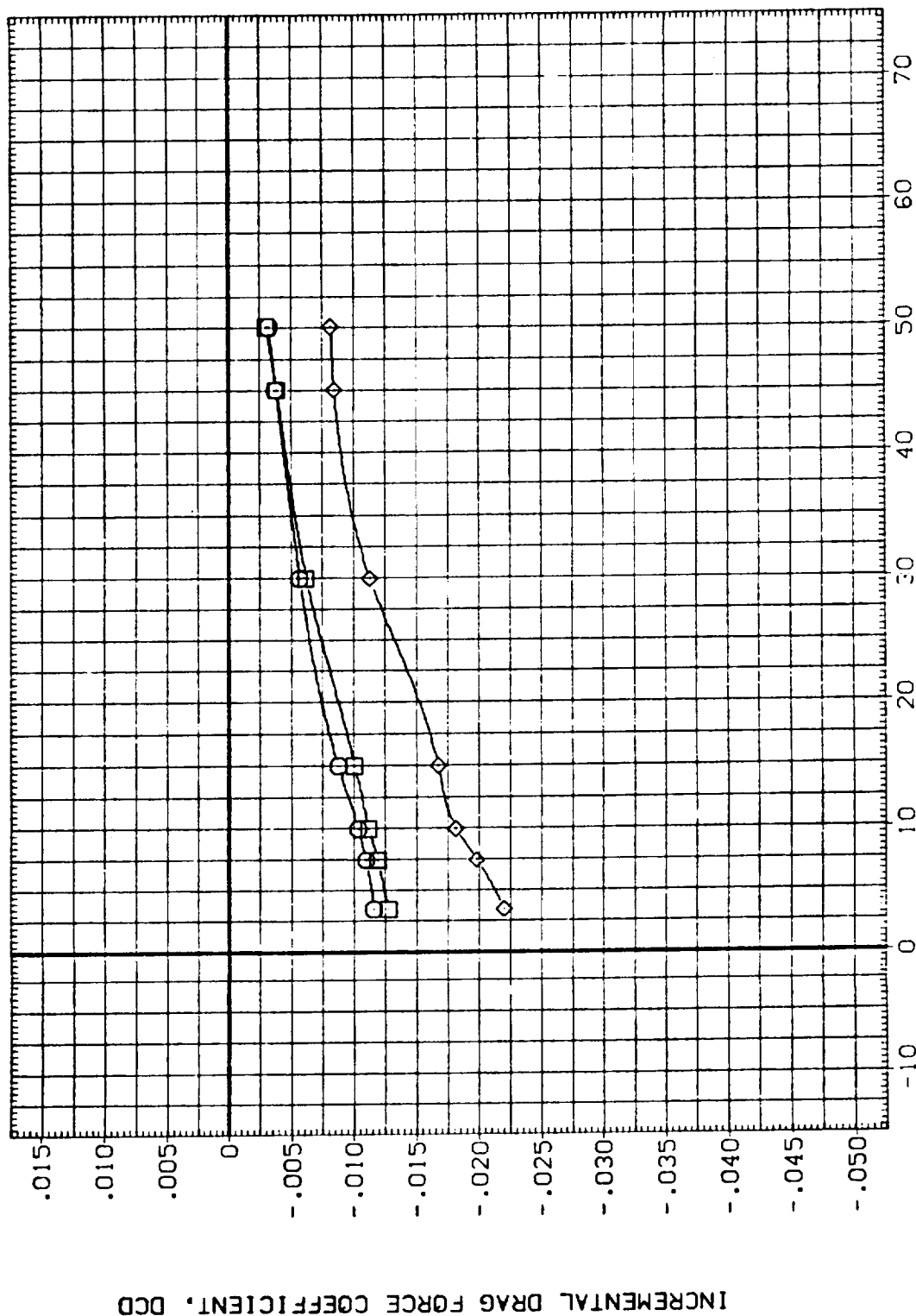


FIG. 11 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)

DATA SET SYMBOL  
(4NH020)  
(4NH023)  
(4NH022)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 Q251 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 Q251 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 Q251 (ORBITER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
4.000 .000 .600 5.000 SREF 2690.0000 SQ.FT.  
6.000 .000 .600 5.000 LREF 474.8100 IN.  
8.000 .000 .600 5.000 BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP 375.0000 IN. Y0  
SCALE .0125

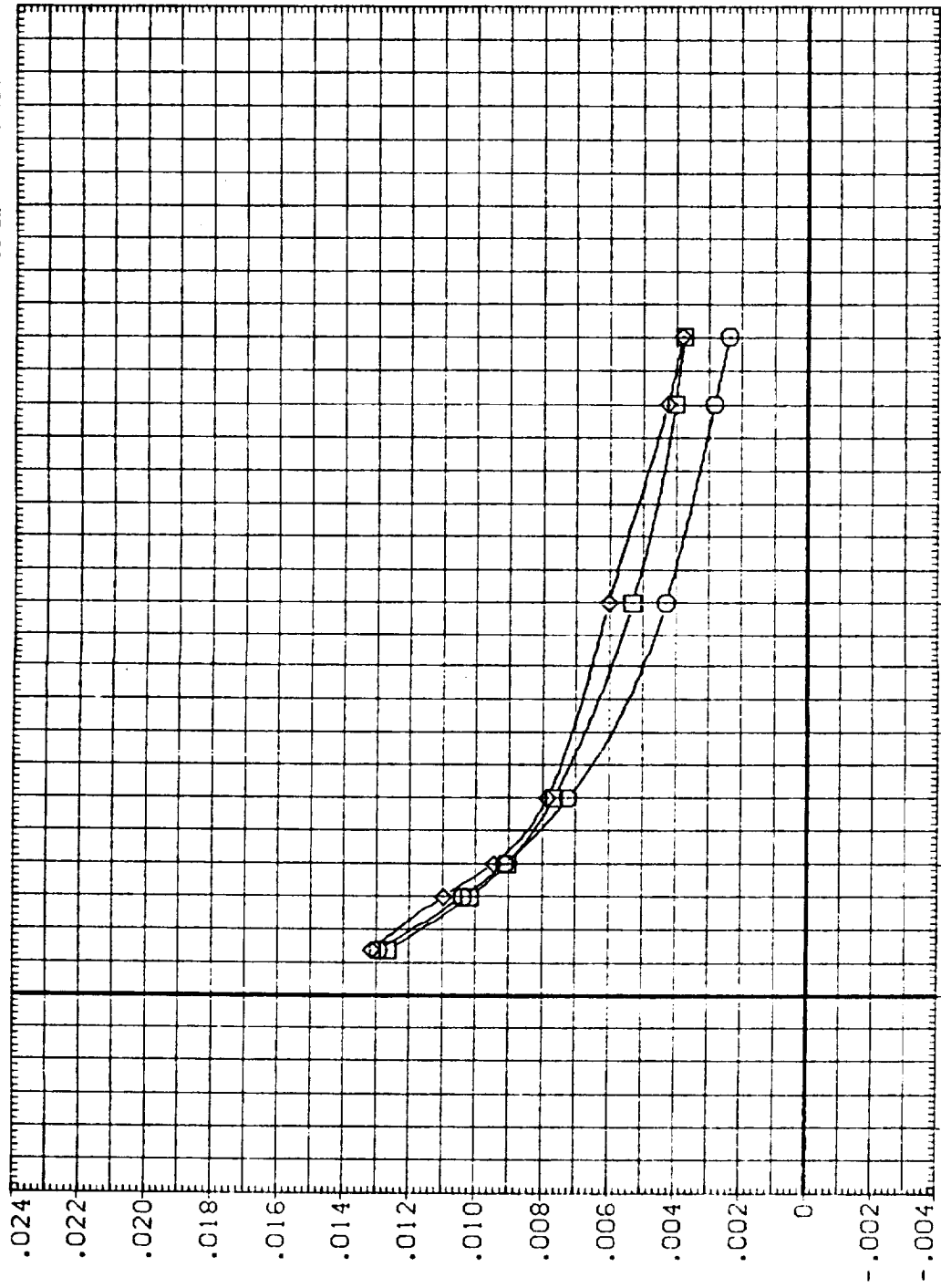


FIG. 11 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
(AJALPHAC= .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NH020)  (4NH023)  (4NH022) 

ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB1TER DATA)  
 ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB1TER DATA)  
 ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB1TER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 4.000 .000 .600 5.000 SREF 2690.0000 SQ.FT.  
 6.000 .000 .600 5.000 LREF 474.8100 IN.  
 8.000 .000 .600 5.000 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

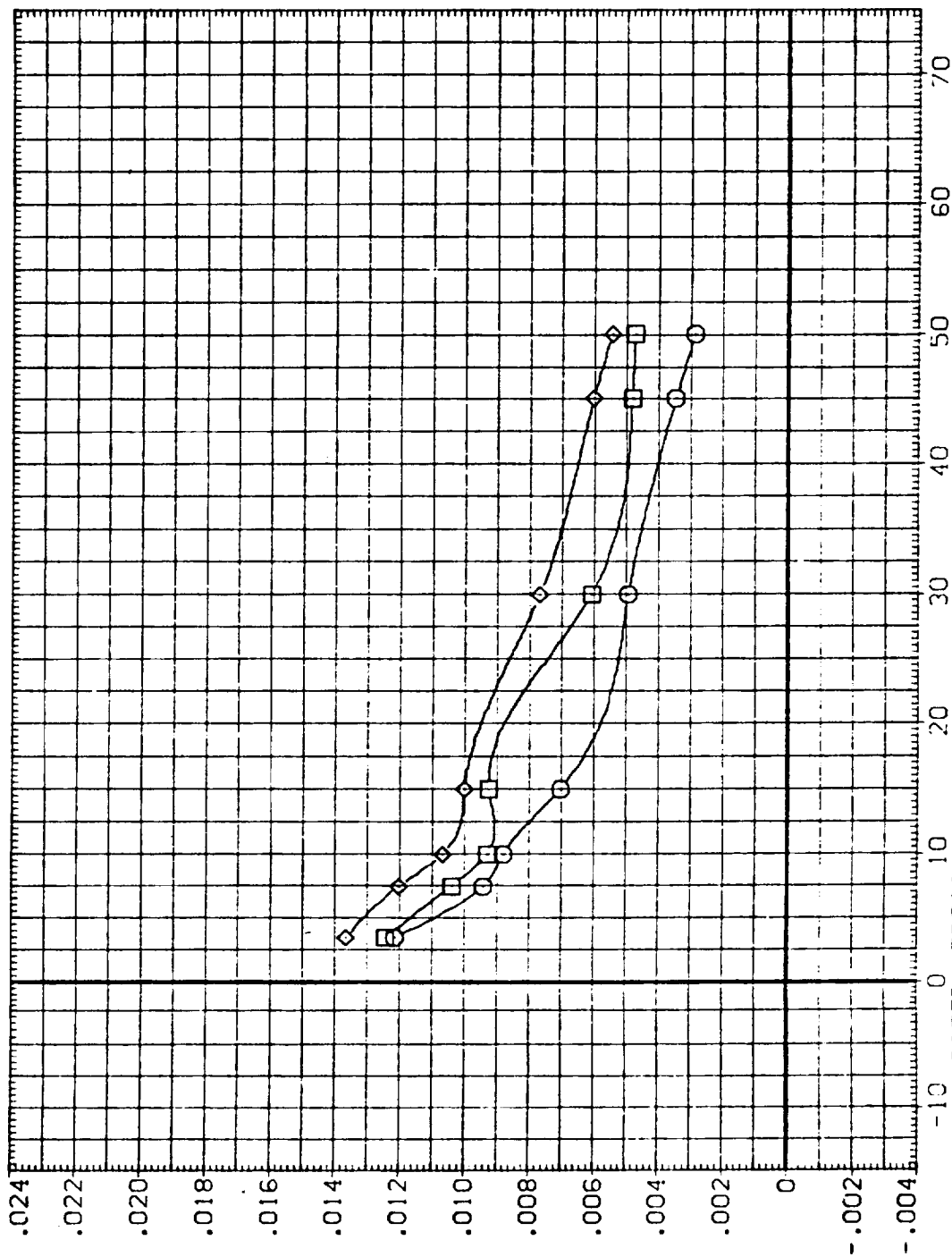
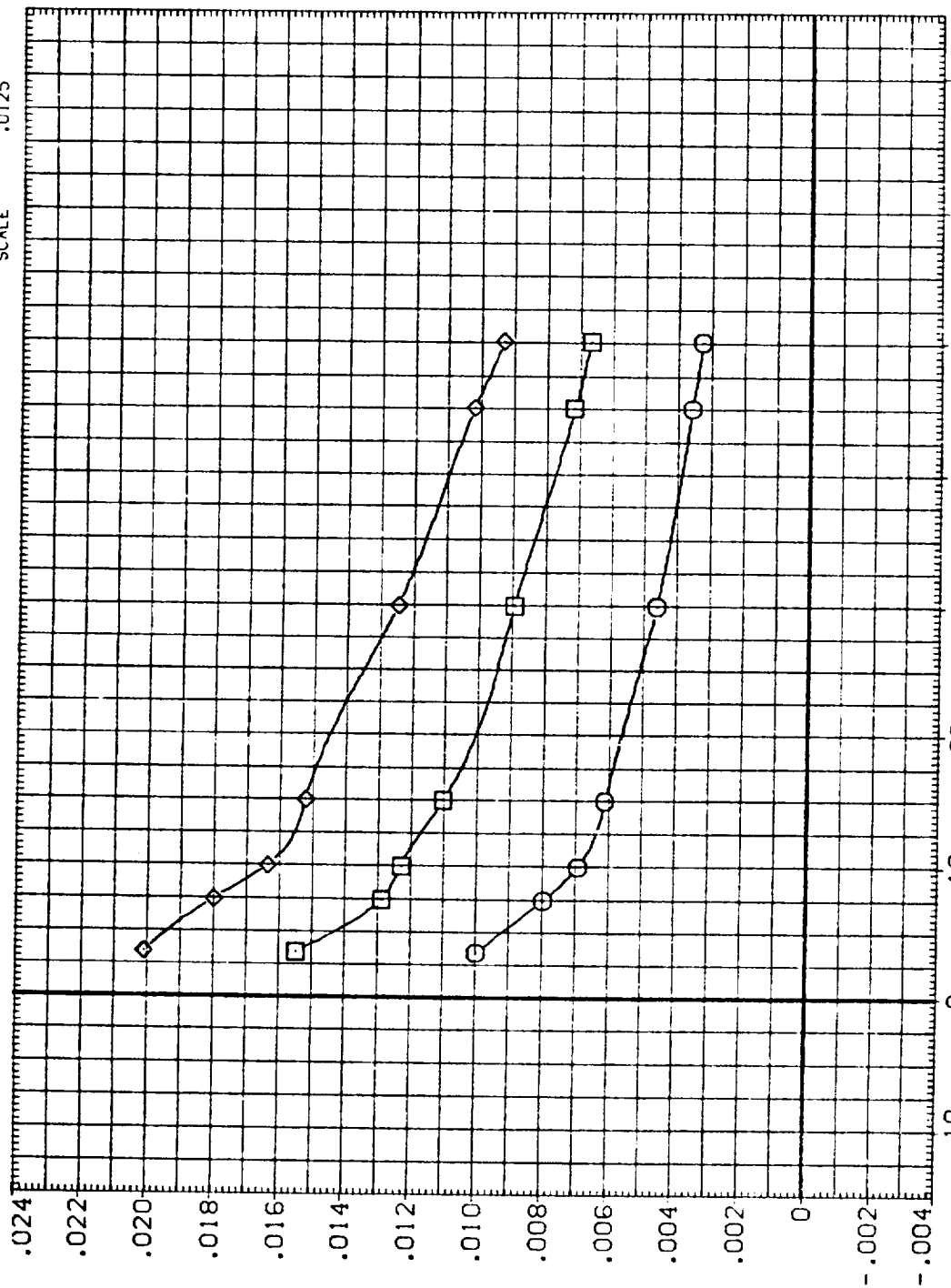


FIG. 11 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
 (B)ALPHAC= 2.00 PAGE 65

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH020) ARC (4-120(CA238) 747/1 AT1 0251 (ORBITER DATA)  
 (4NH023) ARC (4-120(CA238) 747/1 AT1 0251 (ORBITER DATA)  
 (4NH022) ARC (4-120(CA238) 747/1 AT1 0251 (ORBITER DATA)

ORBITER  
 4.000  
 6.000  
 8.000  
 ELEVON  
 .000  
 .000  
 .000  
 MACH  
 .600  
 .600  
 .600  
 STAB  
 5.000  
 5.000  
 5.000  
 REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN.  
 YMRP .0000 IN.  
 ZMRP 375.0000 IN.  
 SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 11 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=0)  
 (C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

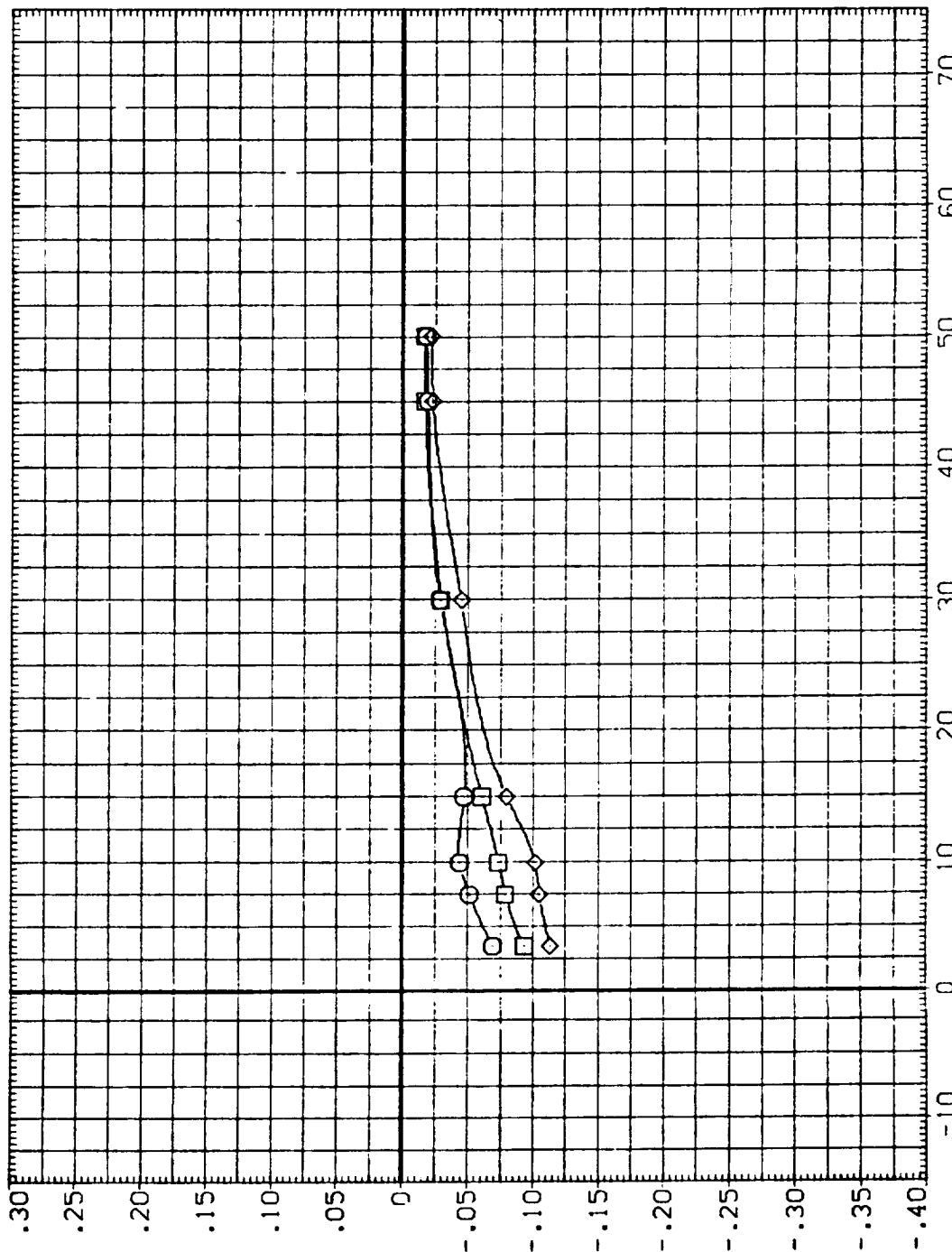


FIG. 12 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNH040) ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)  
 (PNH013) ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)  
 (PNH010) ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)

IORB 4.000 5.000 5.000  
 ELEVON 5.000 5.000 5.000  
 MACH .600 .600 .600  
 STAB 5.000 5.000 5.000  
 REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

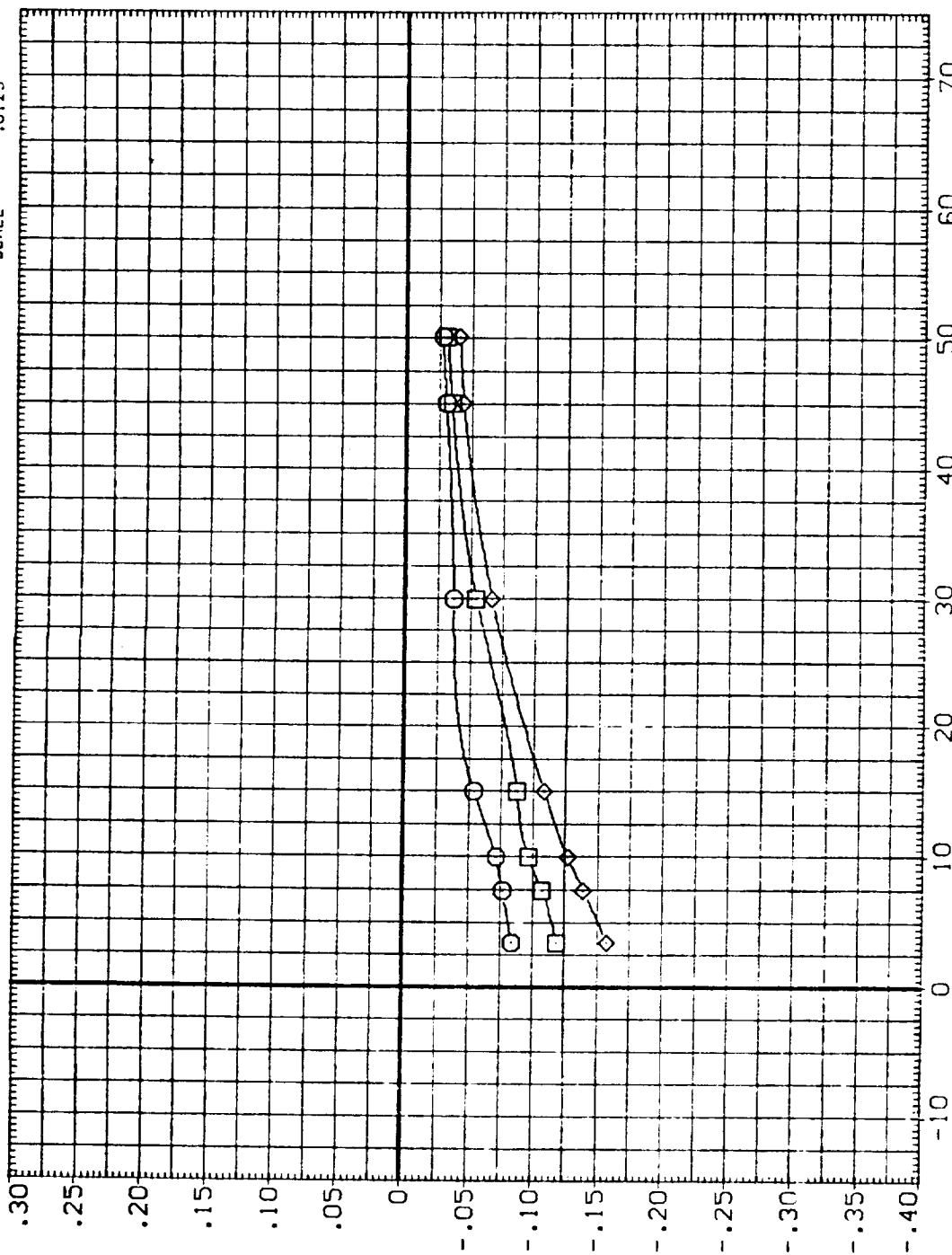
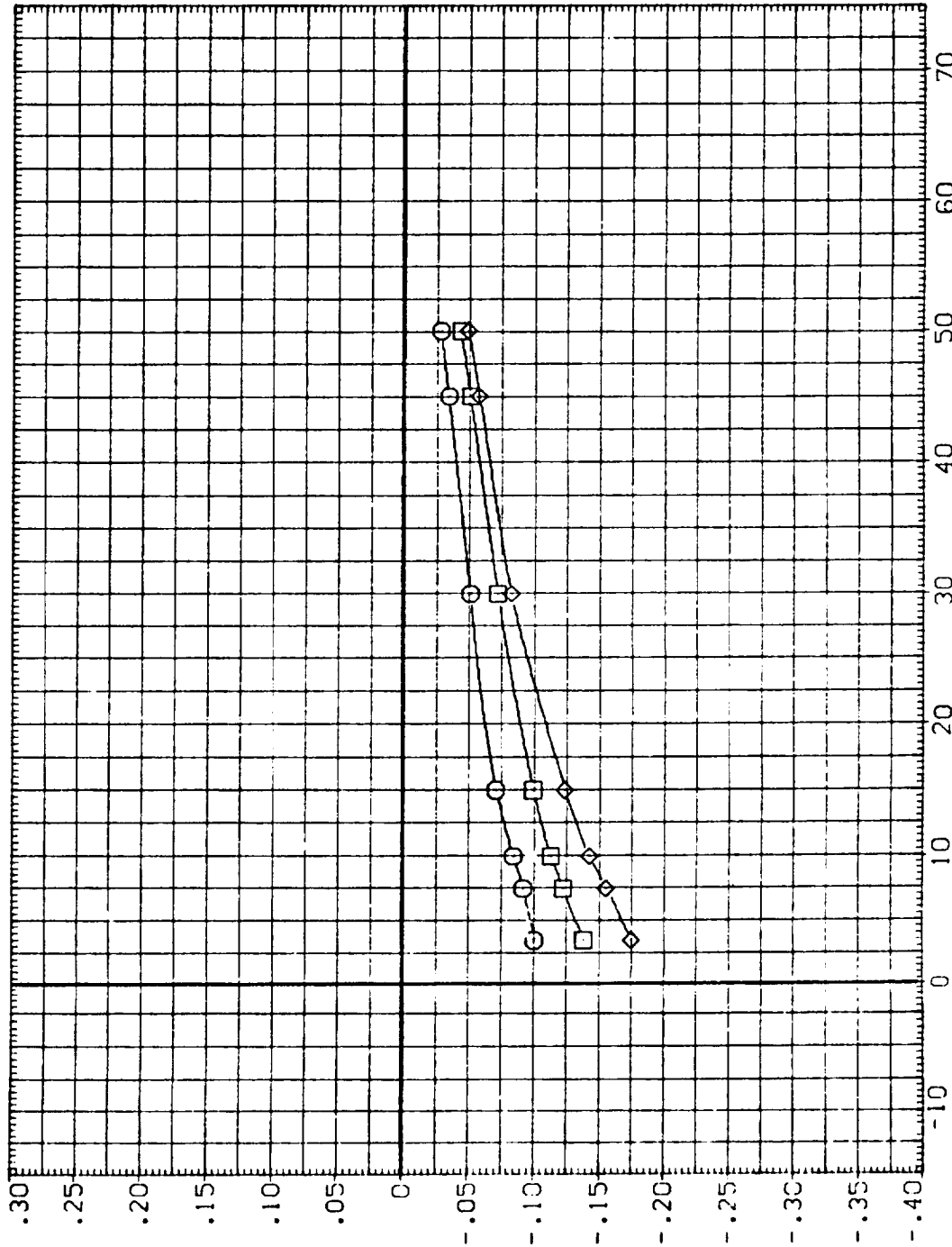


FIG. 12 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
 (B)ALPHAC= 2.00  
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TO RB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	SREF 5500.0000 50. FT.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 12 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)

(C)ALPHAC= 4.00

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNH040) ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
 (PNH013) ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
 (PNH010) ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

IORB ELEVON HACH STAB REFERENCE INFORMATION:  
 4.000 5.000 5.000 SREF 5500.0000 SG.FT.  
 6.000 5.000 5.000 LREF 327.7800 IN.  
 8.000 5.000 5.000 BREF 2346.0400 IN.  
 XHRP 1339.9000 IN. XC  
 YHRP .0000 IN. YC  
 ZHRP 190.7500 IN. ZC  
 SCALE .0125

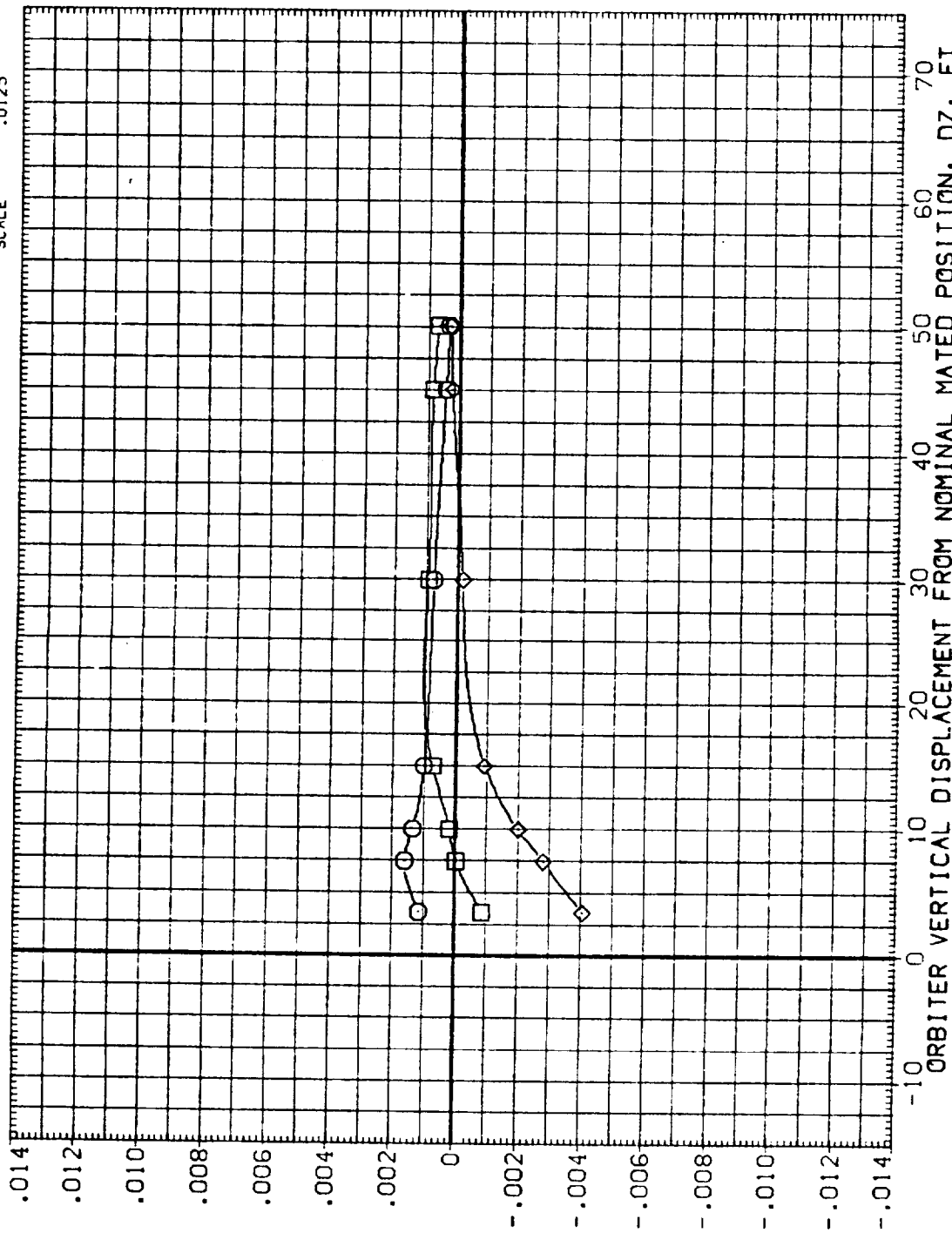


FIG. 12 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
 (A)ALPHAC= .00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH040)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH010)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN ZC
						SCALE .0125

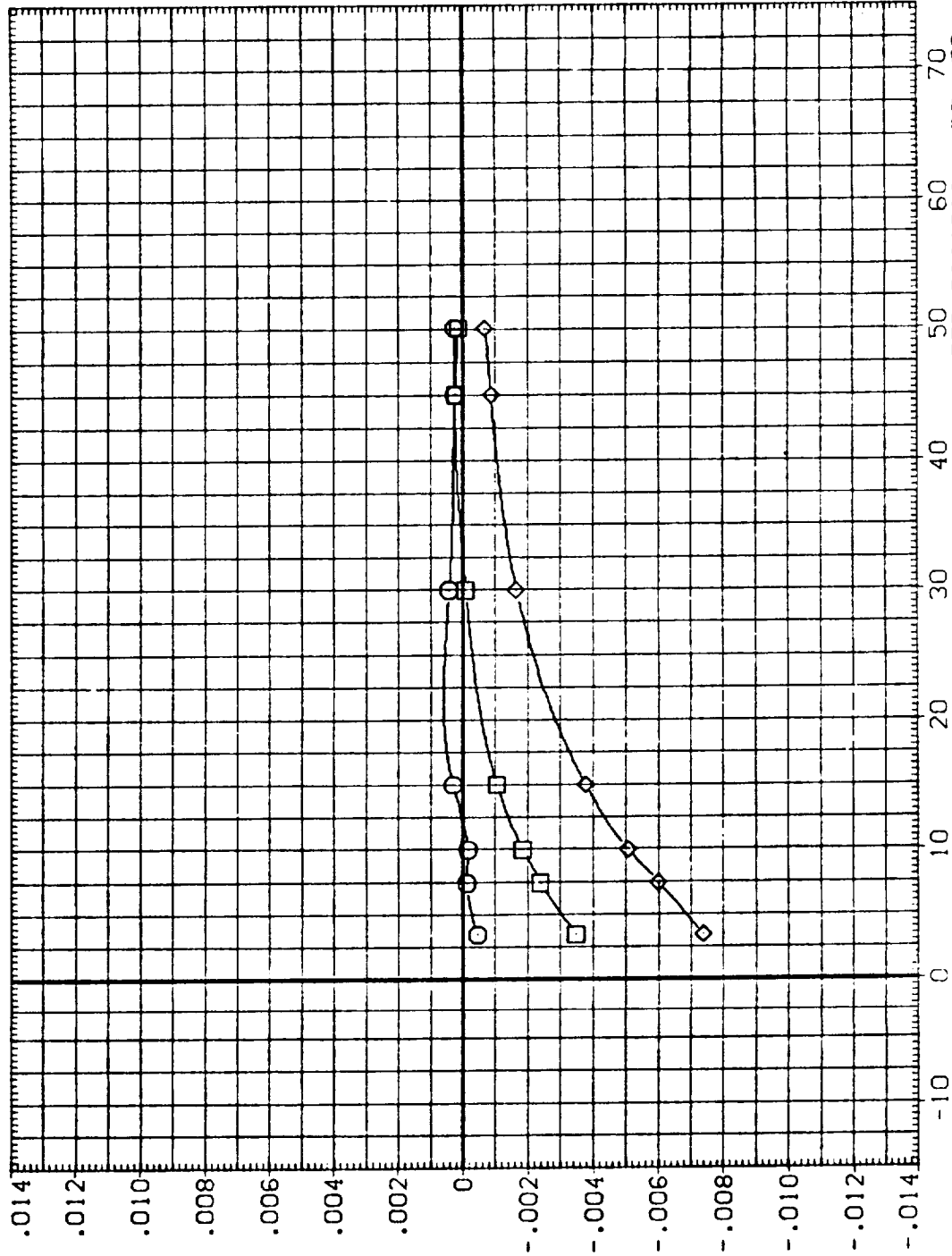


FIG. 12 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)

DATA SET SYMBOL  
(PNH040)  
(PNH013)  
(PNH010)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
4.000 5.000 .600 5.000 SREF 5500.0000 SQ.FT.  
6.000 5.000 .600 5.000 LREF 327.7800 IN.  
8.000 5.000 .600 5.000 BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

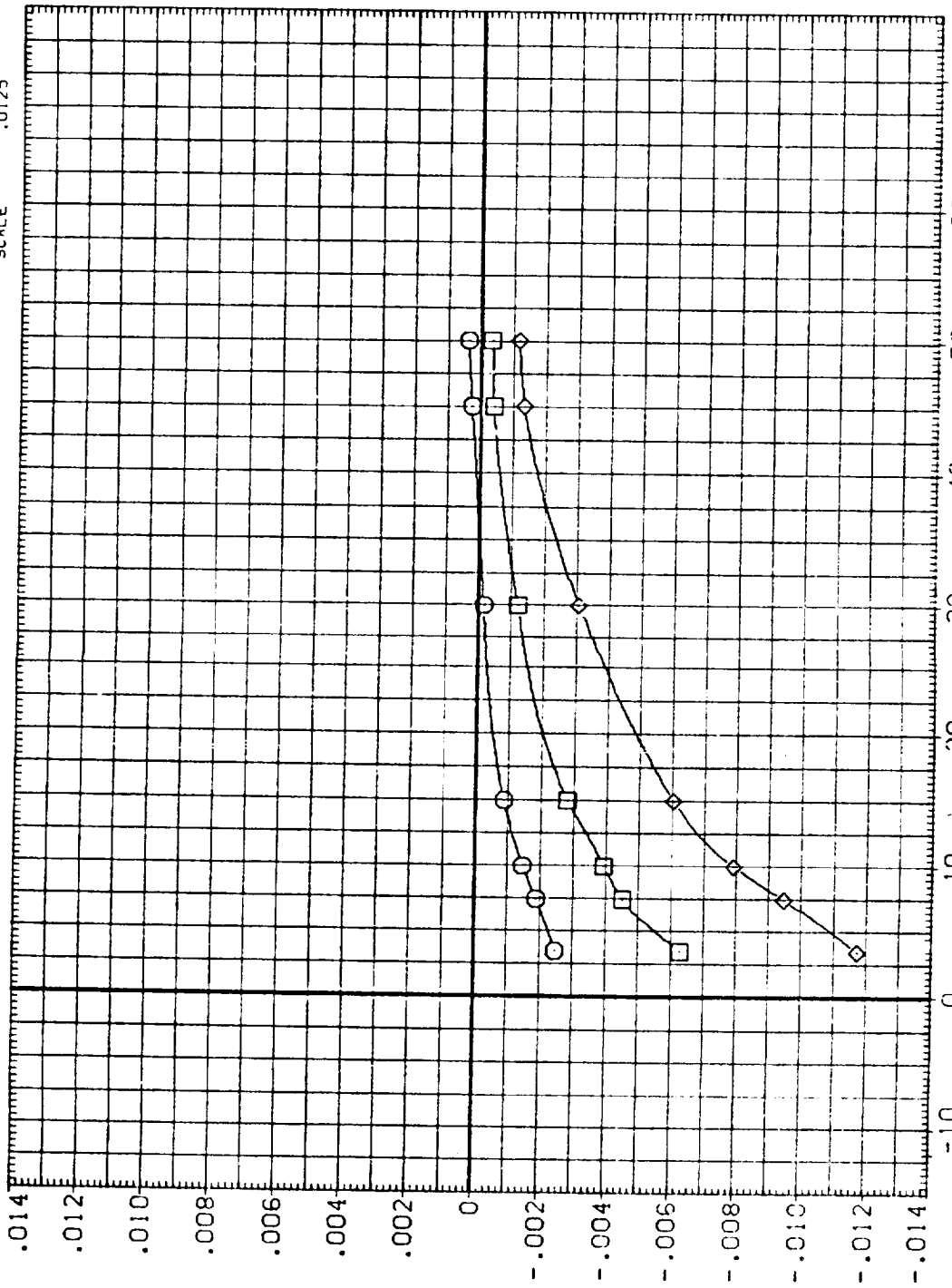
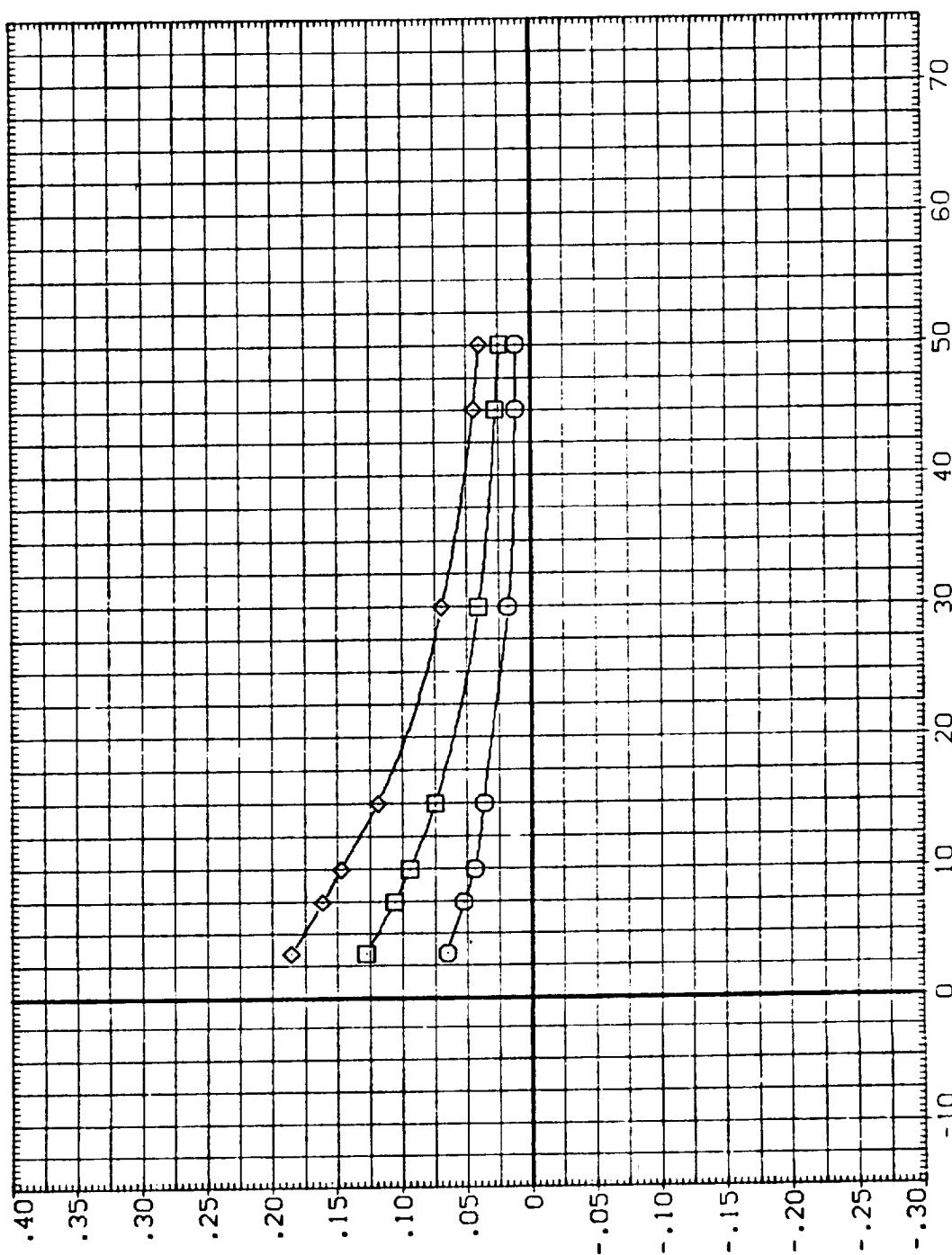


FIG. 12 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
(C)ALPHAC= 4.00  
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH040)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH010)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1338.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 12 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	4.000	5.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	8.000	5.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

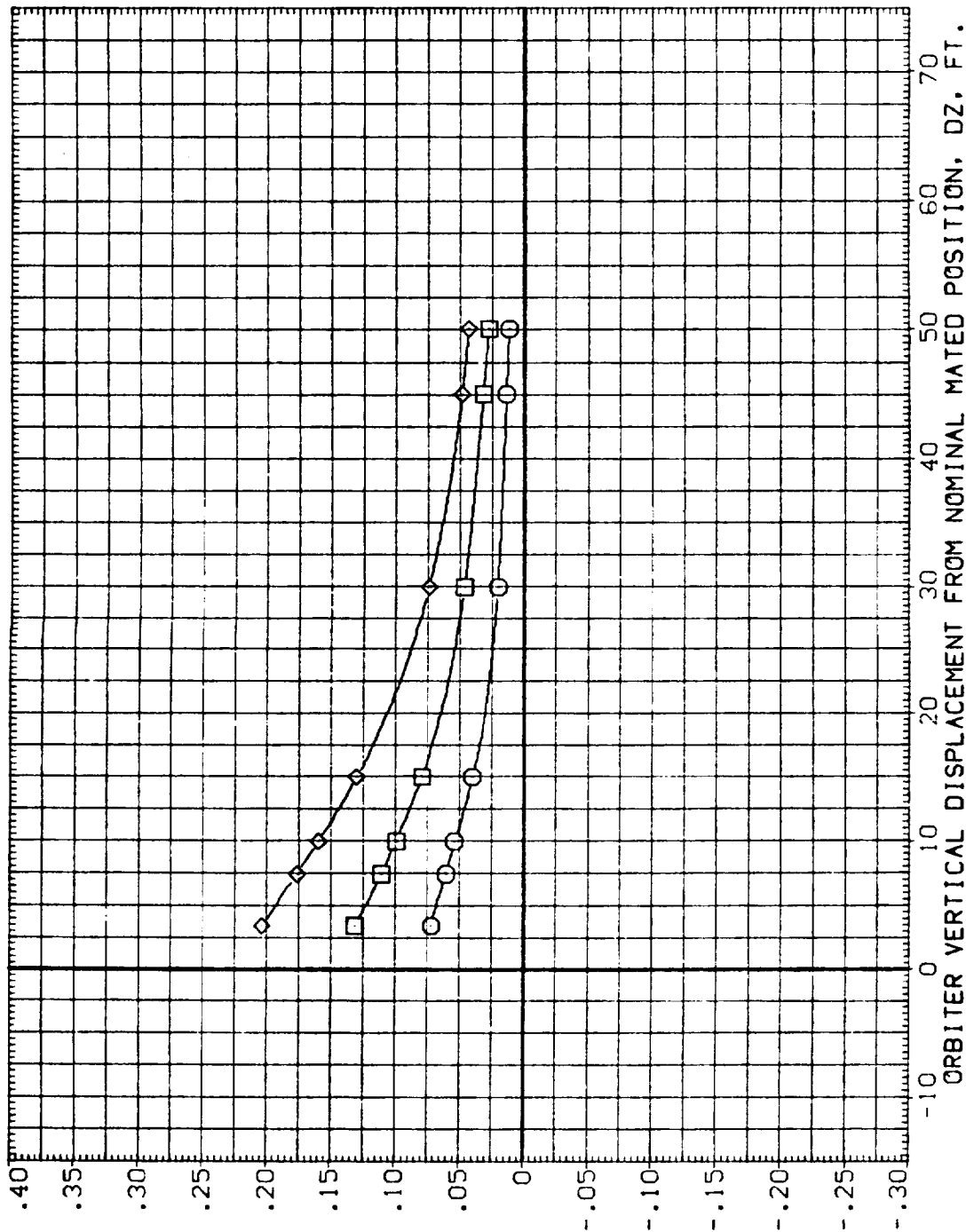


FIG. 12 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH040)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	5.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH010)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	5.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

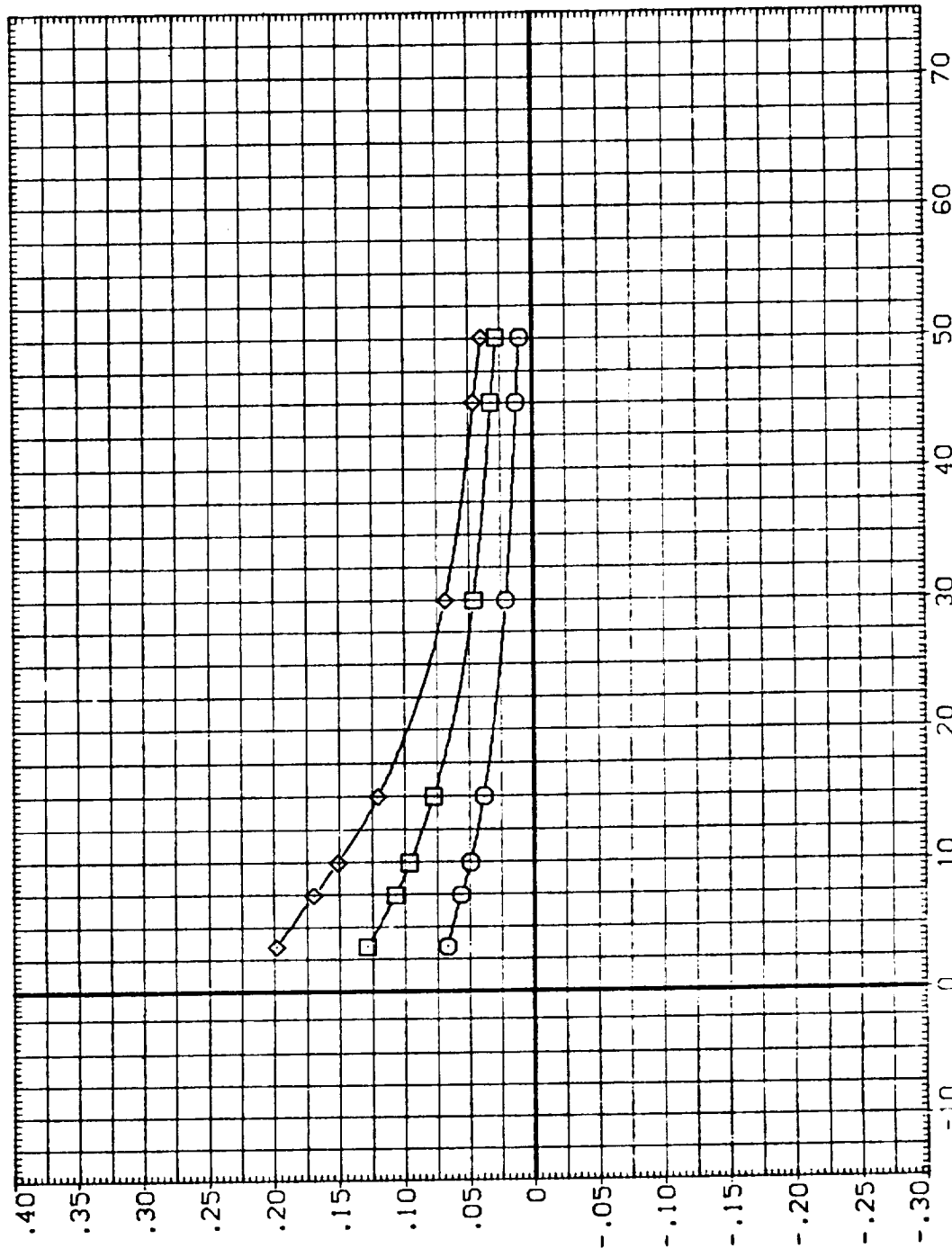


FIG. 12 EFFECT OF ORB INCIDENCE ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH040)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	5.000	SREF 2690.0000 50.FT.
(4NH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH010)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

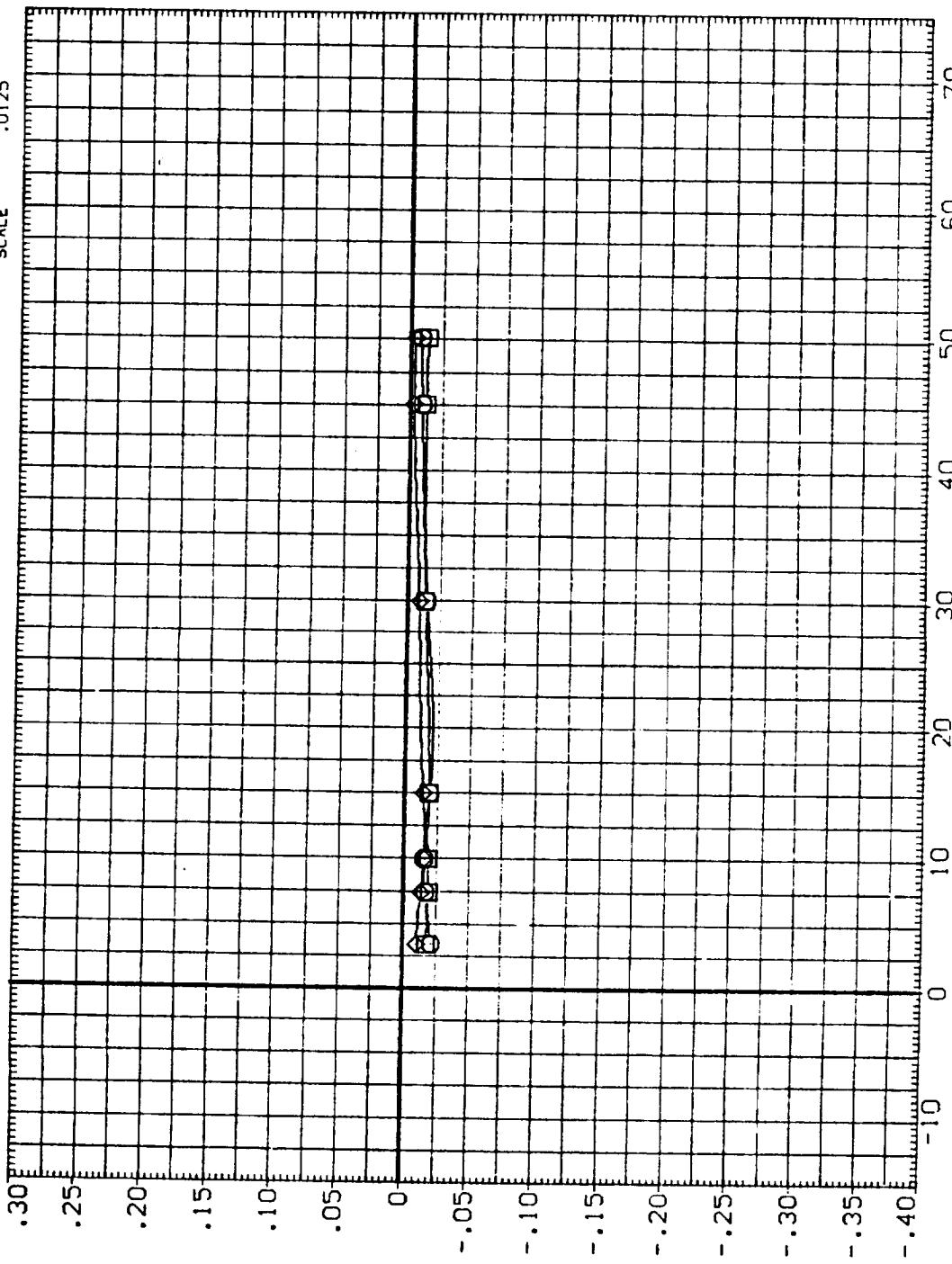
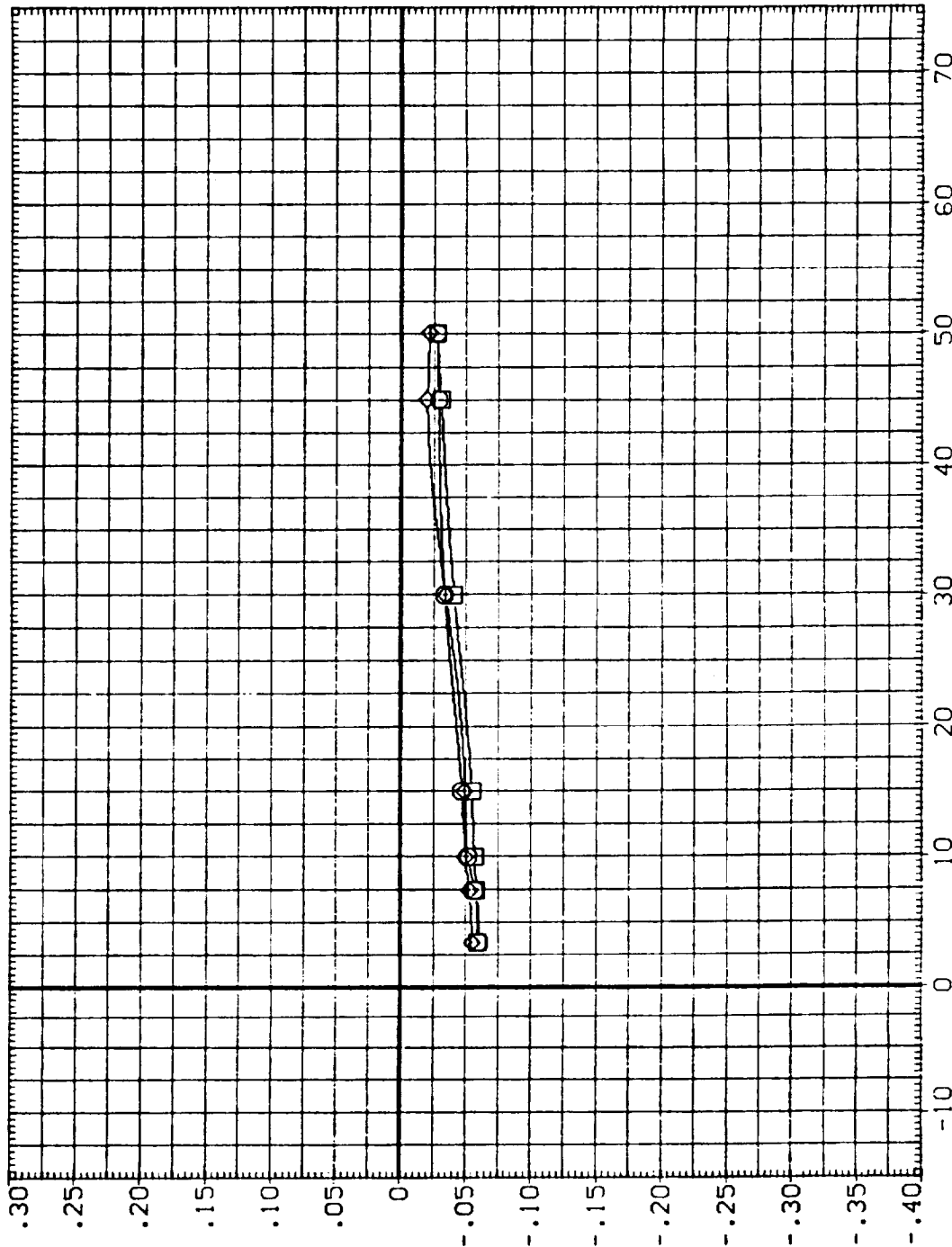


FIG. 13 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
(A)ALPHAC= .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH040) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
 (4NH013) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
 (4NH010) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 4.000 5.000 .600 5.000 SREF 2690.0000 SQ.FT.  
 6.000 5.000 .600 5.000 LREF 474.8100 IN.  
 8.000 5.000 .600 5.000 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 13 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)

(B)ALPHAC= 2.00

# DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NH040)  
(4NH013)  
(4NH010)

ARC 14-120(CA23B)  
ARC 14-120(CA23B)  
ARC 14-120(CA23B)

747/1 AT1  
747/1 AT1  
747/1 AT1

02S1 (ORBITTER DATA)  
02S1 (ORBITTER DATA)  
02S1 (ORBITTER DATA)

IORB  
4.000  
6.000  
8.000

ELEVON  
5.000  
5.000  
5.000

MACH  
.600  
.600  
.600

STAB  
5.000  
5.000  
5.000

REFERENCE INFORMATION  
SREF 2690.0000 50. FT.  
LREF 474.8100 IN.  
BREF 936.8800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

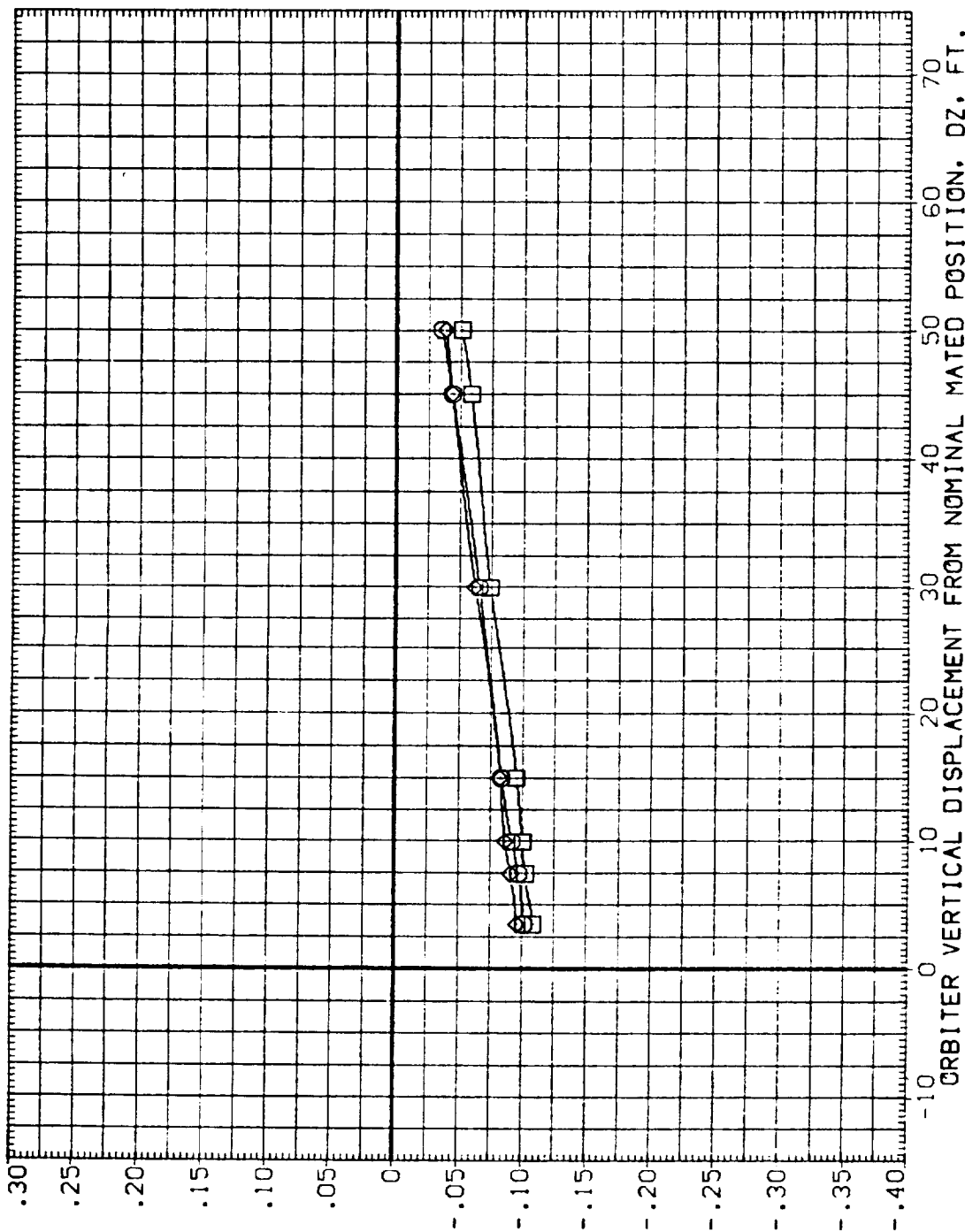


FIG. 13 EFFECT OF ORB INCIDENCE ON ORBITTER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
(C)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH040)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	4.000	5.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH013)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	5.000	.600	5.000	UREF 474.8100 IN.
(4NH010)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	8.000	5.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

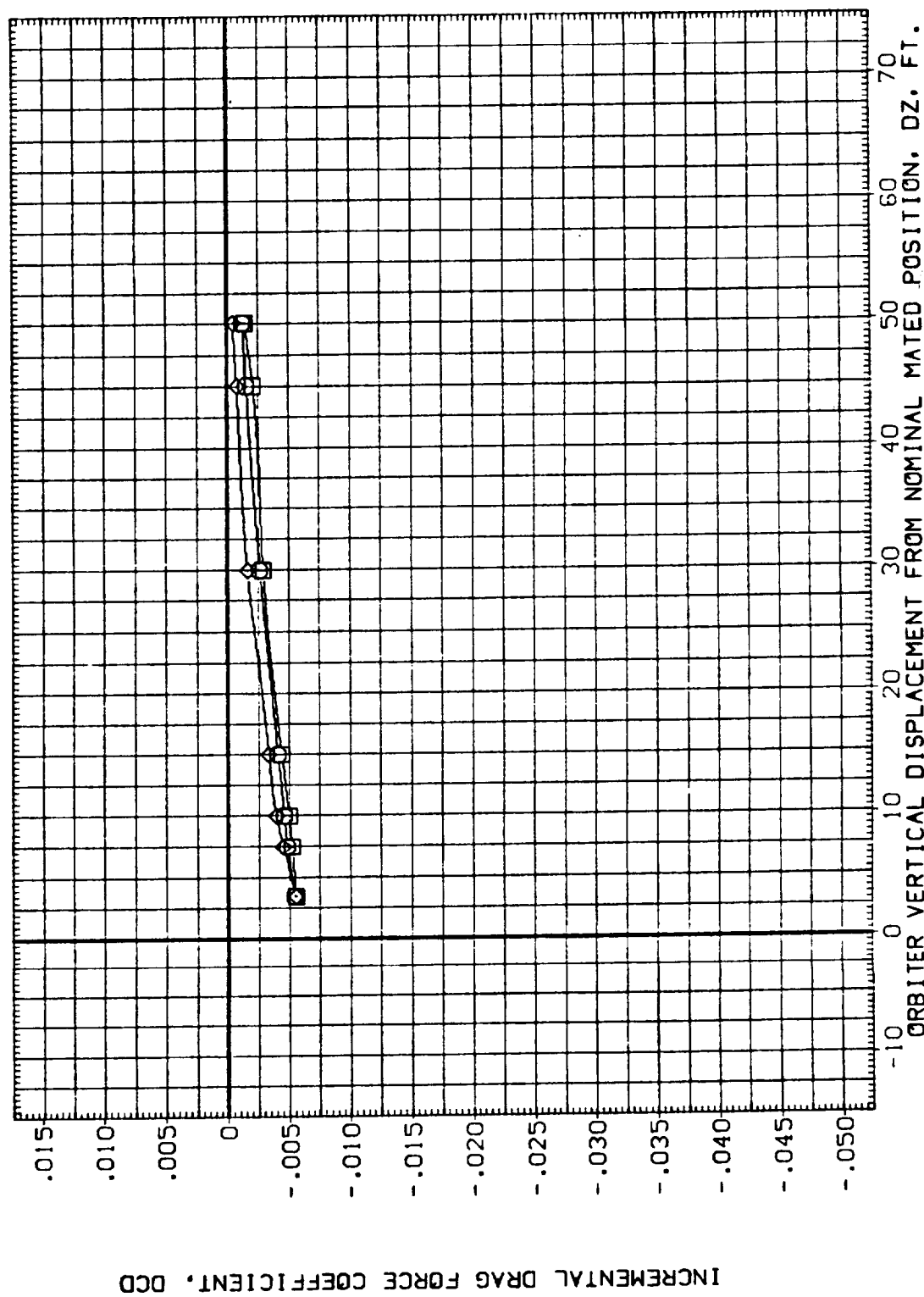


FIG. 13 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
(A)ALPHAC= .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NH040)  
(4NH013)  
(4NH010)

ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)

IORB ELEVON MACH STAB

4.000 5.000 .600 5.000  
6.000 5.000 .600 5.000  
8.000 5.000 .600 5.000

REFERENCE INFORMATION

SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

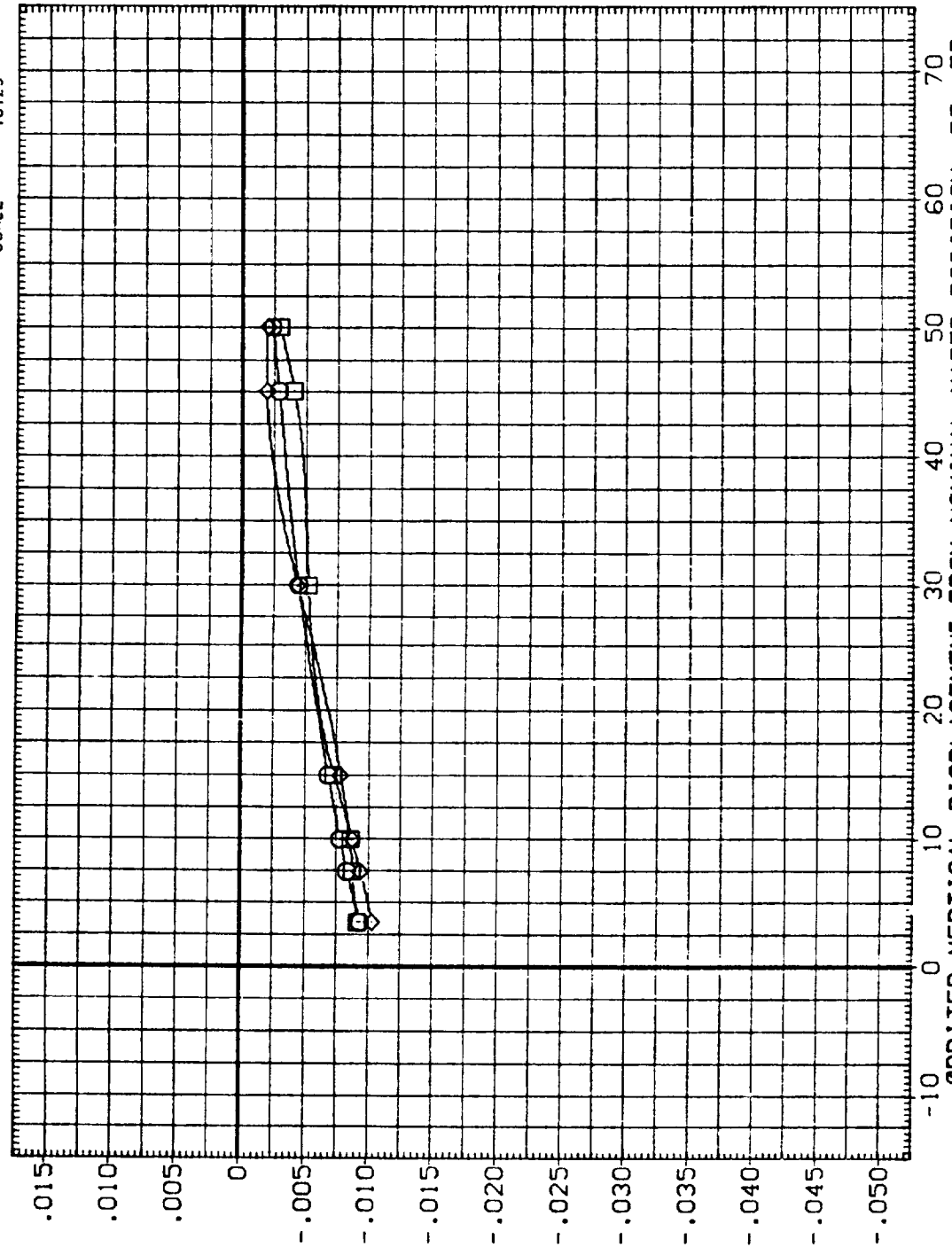


FIG. 13 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH040)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	5.000	SREF	2690.0000 SQ.FT.
(4NH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF	474.8100 IN.
(4NH010)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	5.000	BREF	936.6800 IN.
						XMRP	1109.0000 IN. X0
						YMRP	.0000 IN. Y0
						ZMRP	375.0000 IN. Z0
						SCALE	.0125

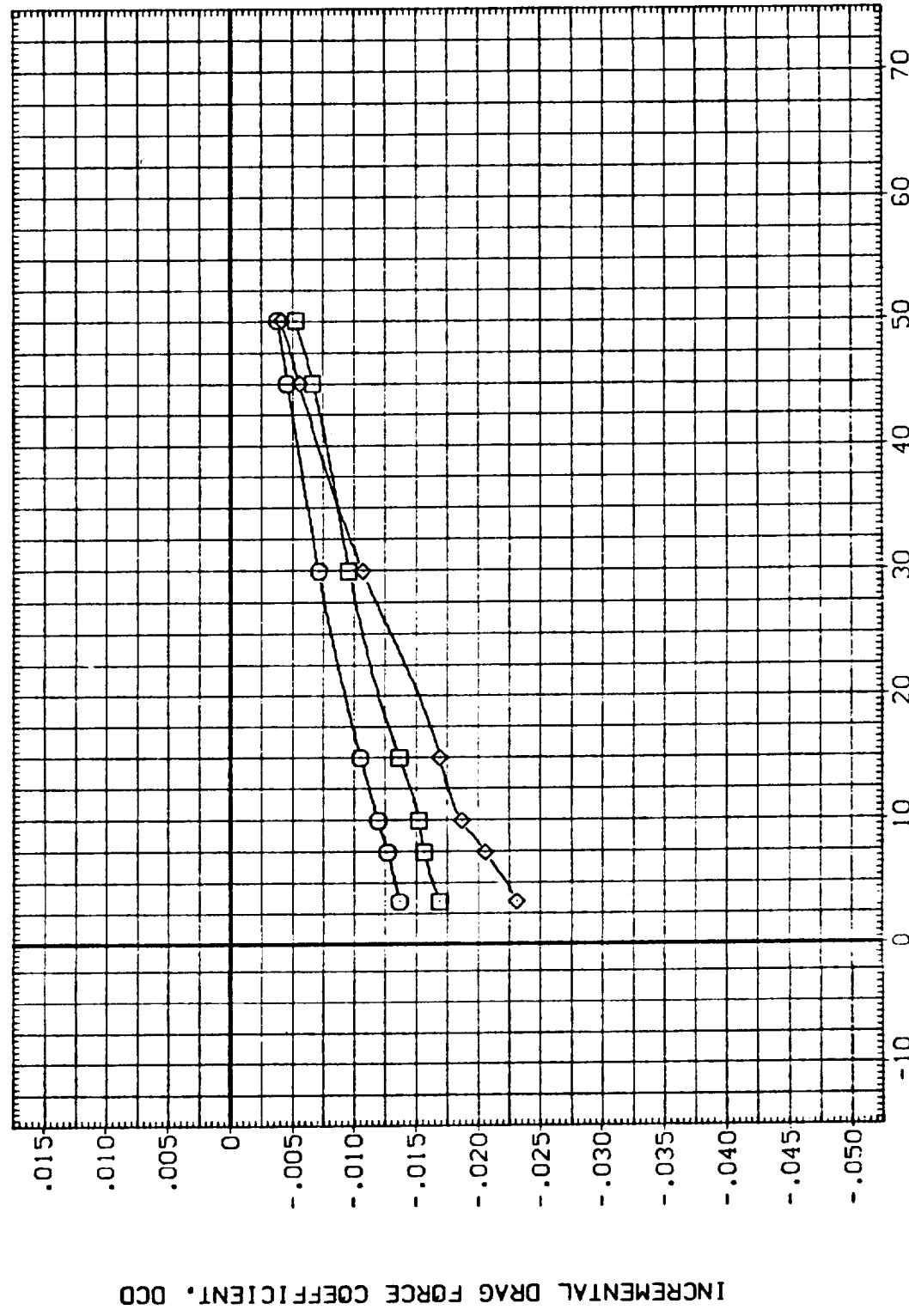
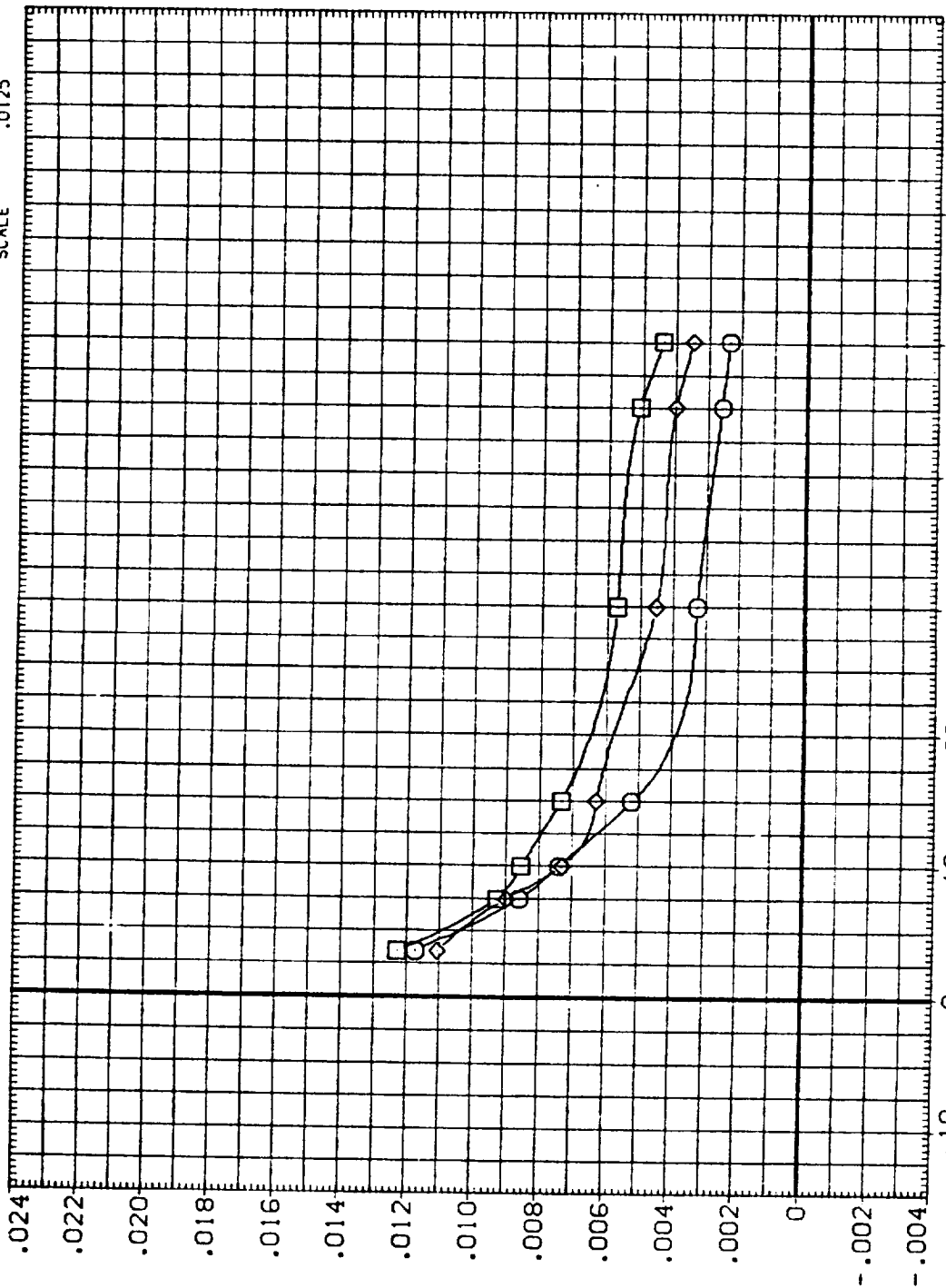


FIG. 13 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
 (C)ALPHAC= 4.00  
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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH040) ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)  
 (4NH013) ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)  
 (4NH010) ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 4.000 5.000 .600 5.000 SREF 2690.0000 SQ.FT.  
 6.000 5.000 .600 5.000 LREF 474.8100 IN.  
 8.000 5.000 .600 5.000 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 13 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
 (A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(4NH040)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.600	5.000	SREF	2690.0000	50. FT.	
(4NH013)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF	474.8100	IN.	
(4NH010)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	5.000	.600	5.000	BREF	936.6800	IN.	X0
						YMRP	1109.0000	IN.	Y0
						ZMRP	375.0000	IN.	Z0
						SCALE	.0125		

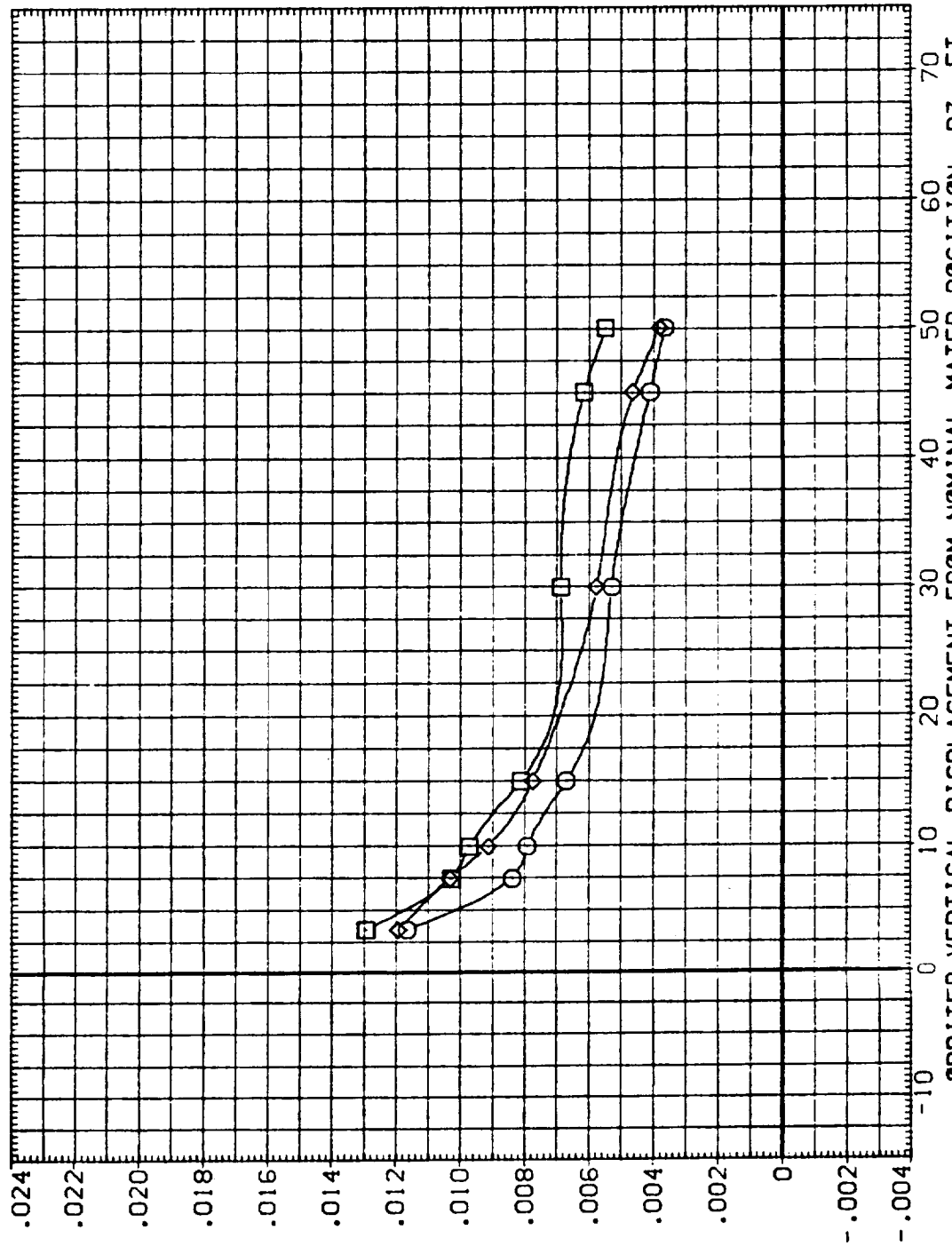


FIG. 13 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)

DATA SET SYMBOL

CONFIGURATION DESCRIPTION

ORBITER DATA

ORBITER DATA

ORBITER DATA

ORBITER DATA

ORBITER DATA

REFERENCE INFORMATION

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

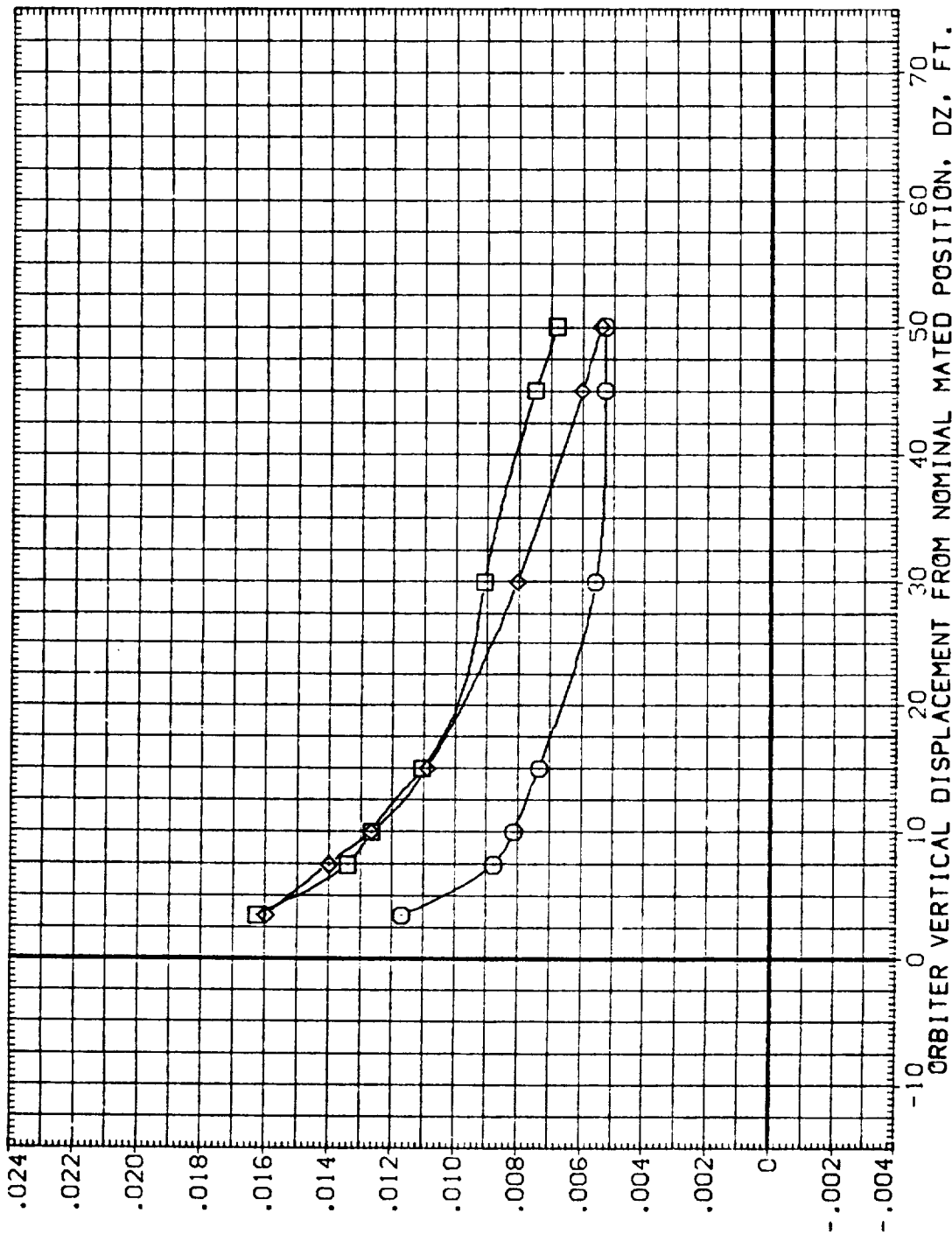


FIG. 13 EFFECT OF ORB INCIDENCE ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF,ELEVON=5)  
(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(JNH013)	ARC 14-120(CA238) 747/1 AT1 QZS1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 50.FT.
(JNH039)	ARC 14-120(CA238) 747/1 AT1 QZS1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.5000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

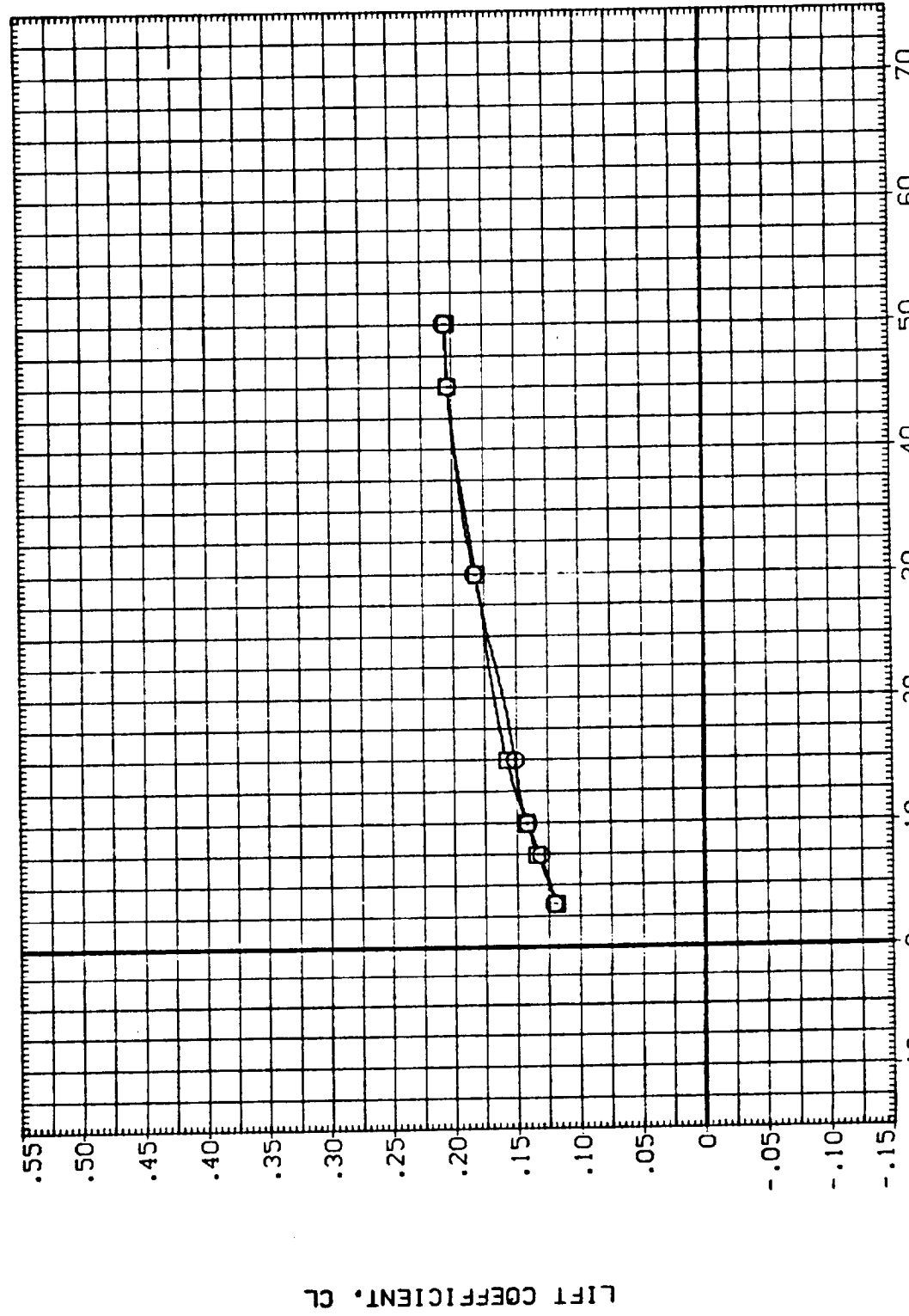


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (A)ALPHAC= 2.00

DATA SET SYMBOL	CONF	DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(JNH013)	ARC 14-120(CA238)	747/1 AT1 025	.000	5.000	6.000	.600	SREF 5500.0000 50.FT.
(JNH039)	ARC 14-120(CA238)	747/1 AT1 025	10.000	5.000	6.000	.600	LREF 327.7800 IN.
							BREF 2348.0400 IN.
							XMRP 1339.9000 IN. XC
							YMRP .0000 IN. YC
							ZMRP 190.7500 IN. ZC
							SCALE .0125

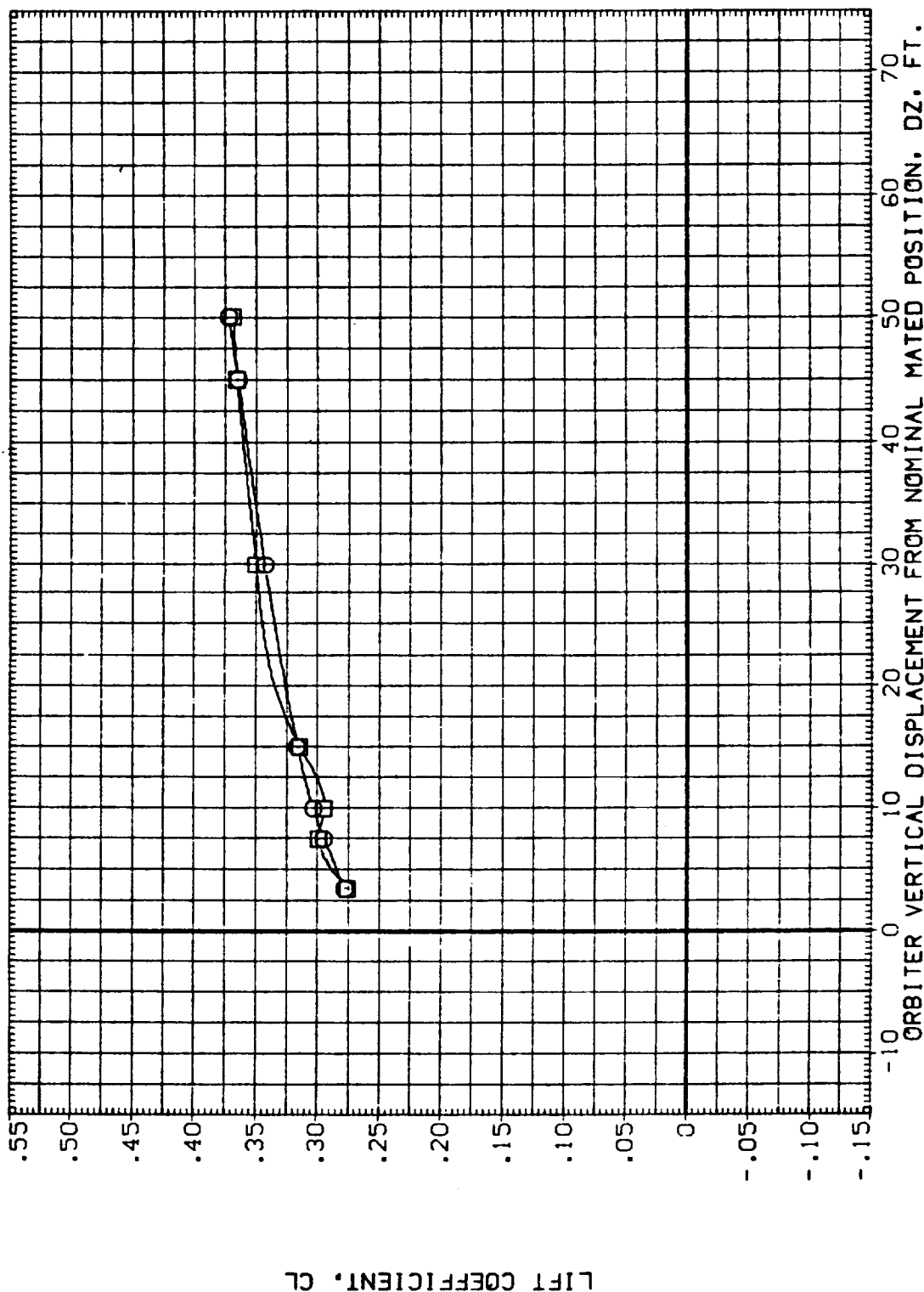


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(B)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(JNH013)	ARC 14-120(CA238) 747/1 AT 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(JNH039)	ARC 14-120(CA238) 747/1 AT 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.5000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN ZC
						SCALE .0125

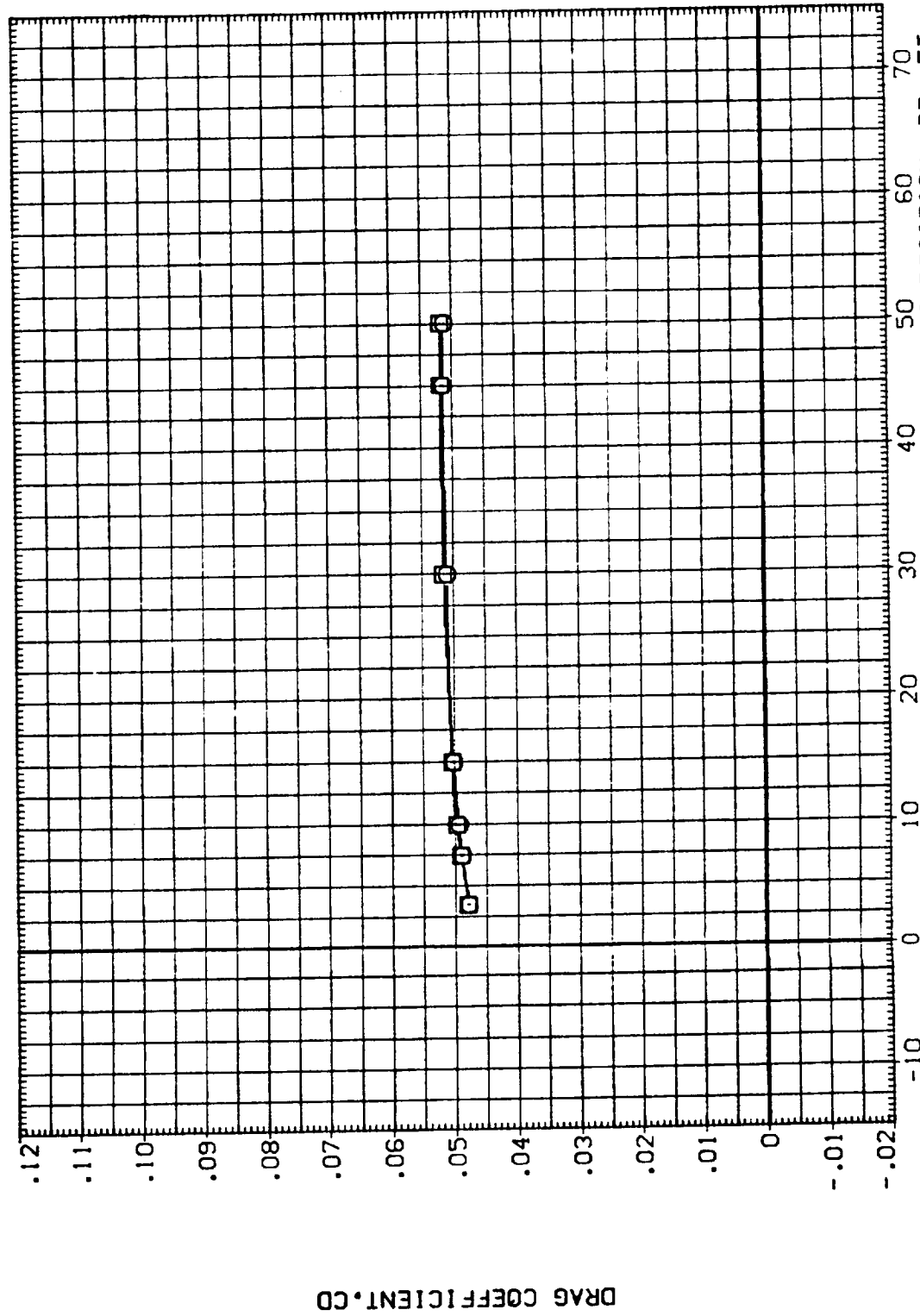


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (A)ALPHAC= 2.00

DATA SET SYMBOL (JNH013) (JNH039)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

RUDDER ELEVON TORB MACH  
.000 5.000 6.000  
10.000 5.000 6.000

REFERENCE INFORMATION  
SREF 5500.0000 Q.F.T.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

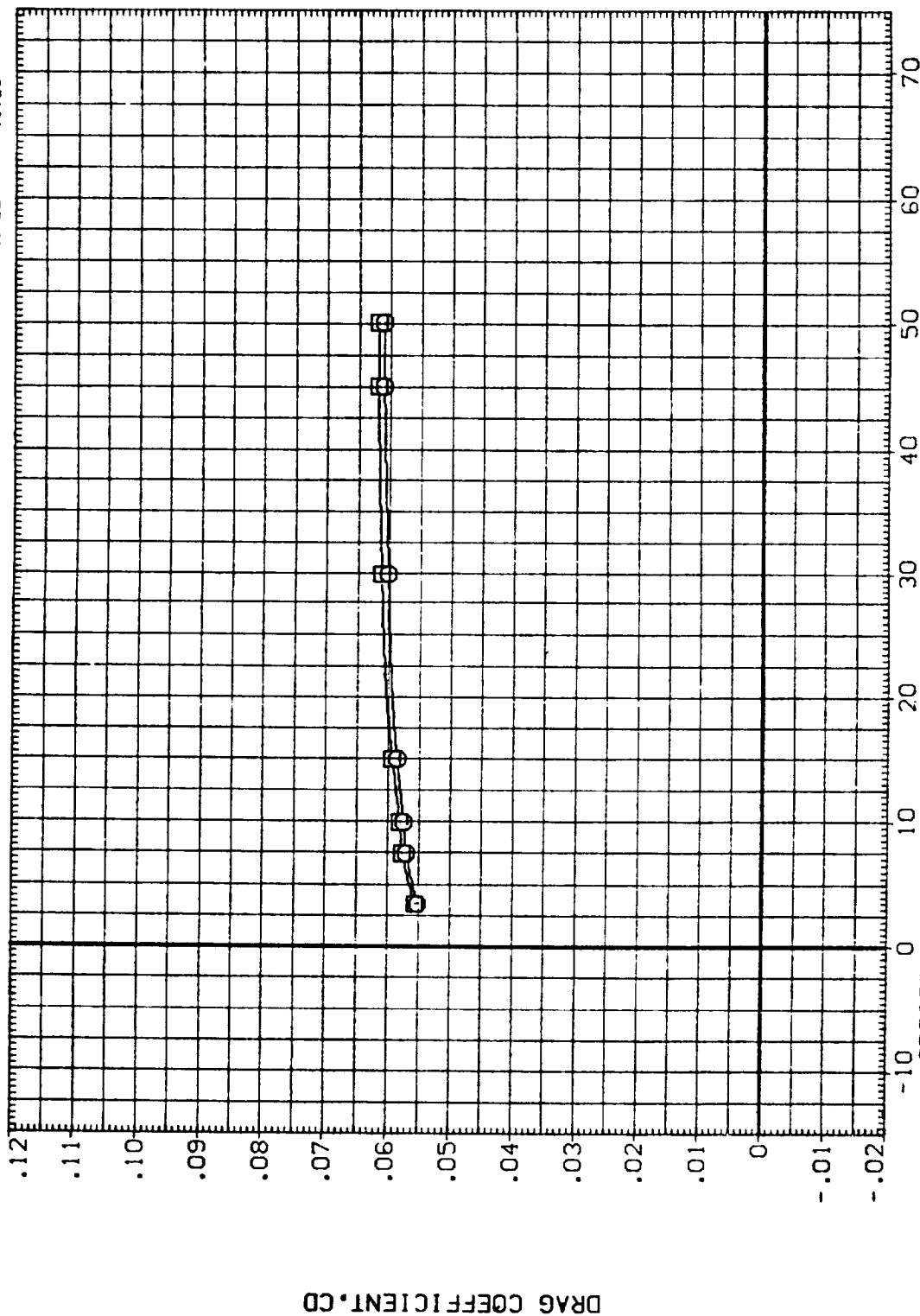


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	TORB	MACH	REFERENCE INFORMATION
(JNH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(JNH039)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN ZC
						SCALE .0125

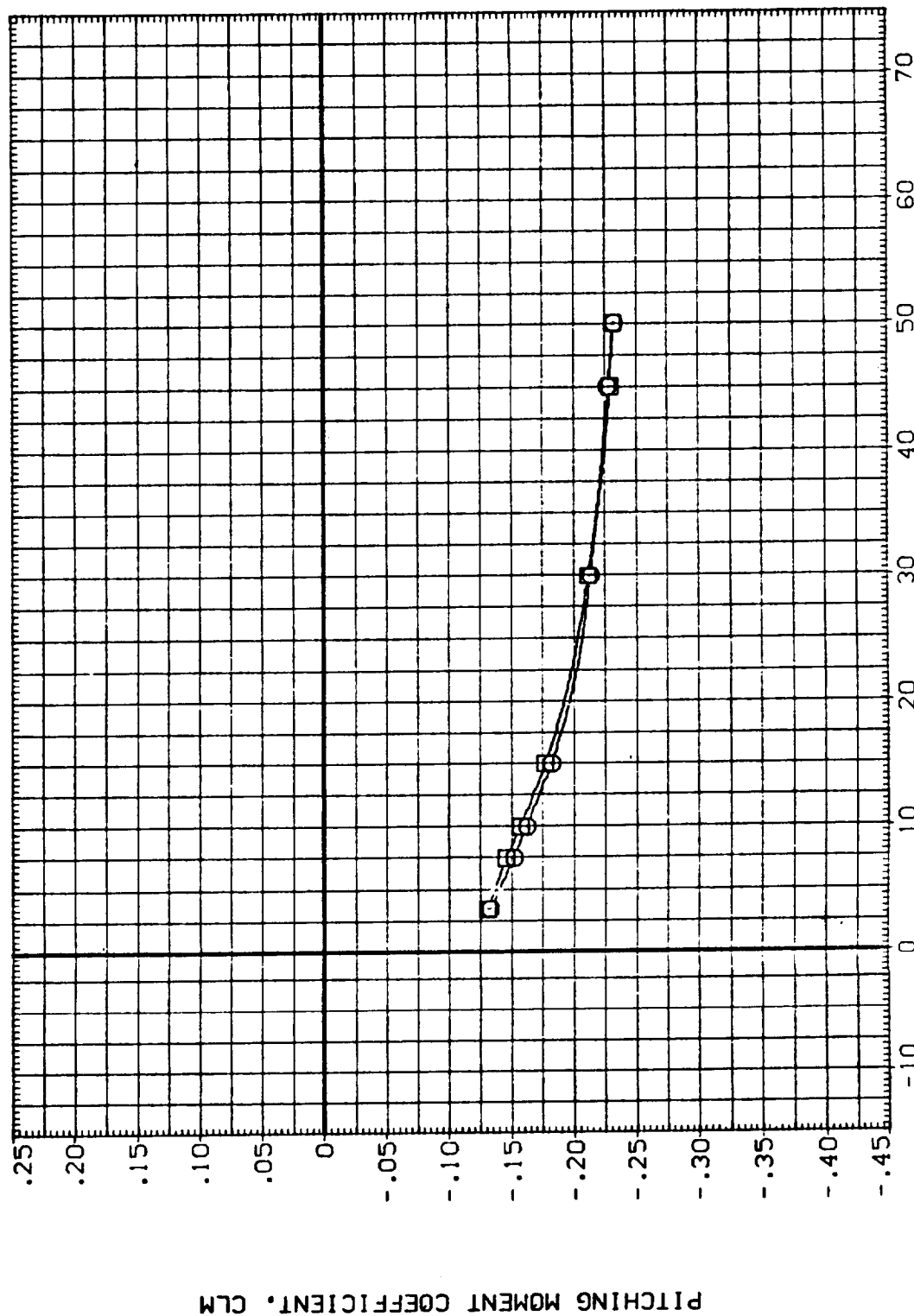


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

DATA SET SYMBOL (JNH013) (JNH039)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)  
 ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

RUDDER ELEVON 10RB MACH  
 .000 5.000 .600  
 10.000 5.000 .600

REFERENCE INFORMATION  
 SREF 5500.0000 50. FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.5000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

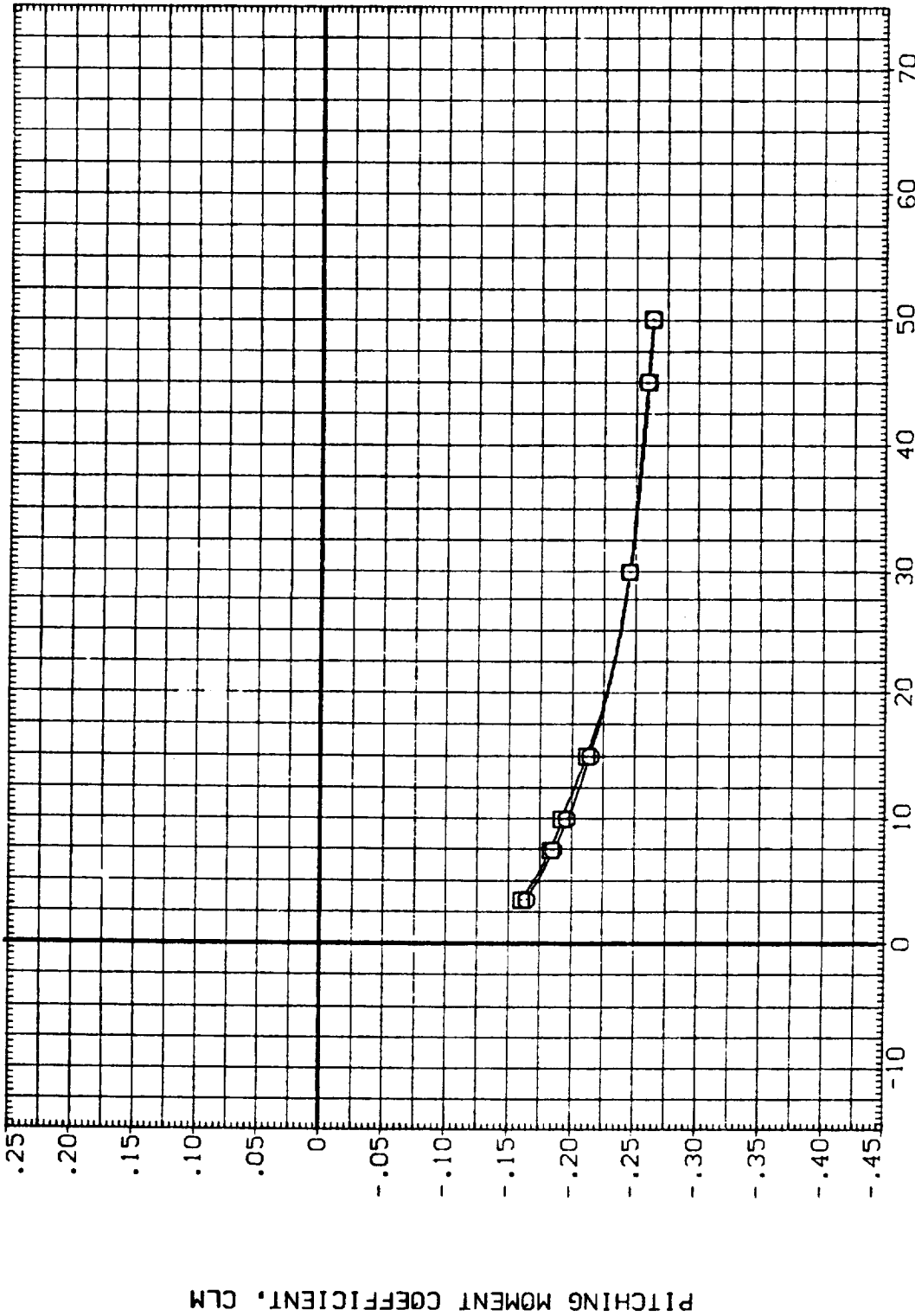


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(JNH013)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(JNH039)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0125

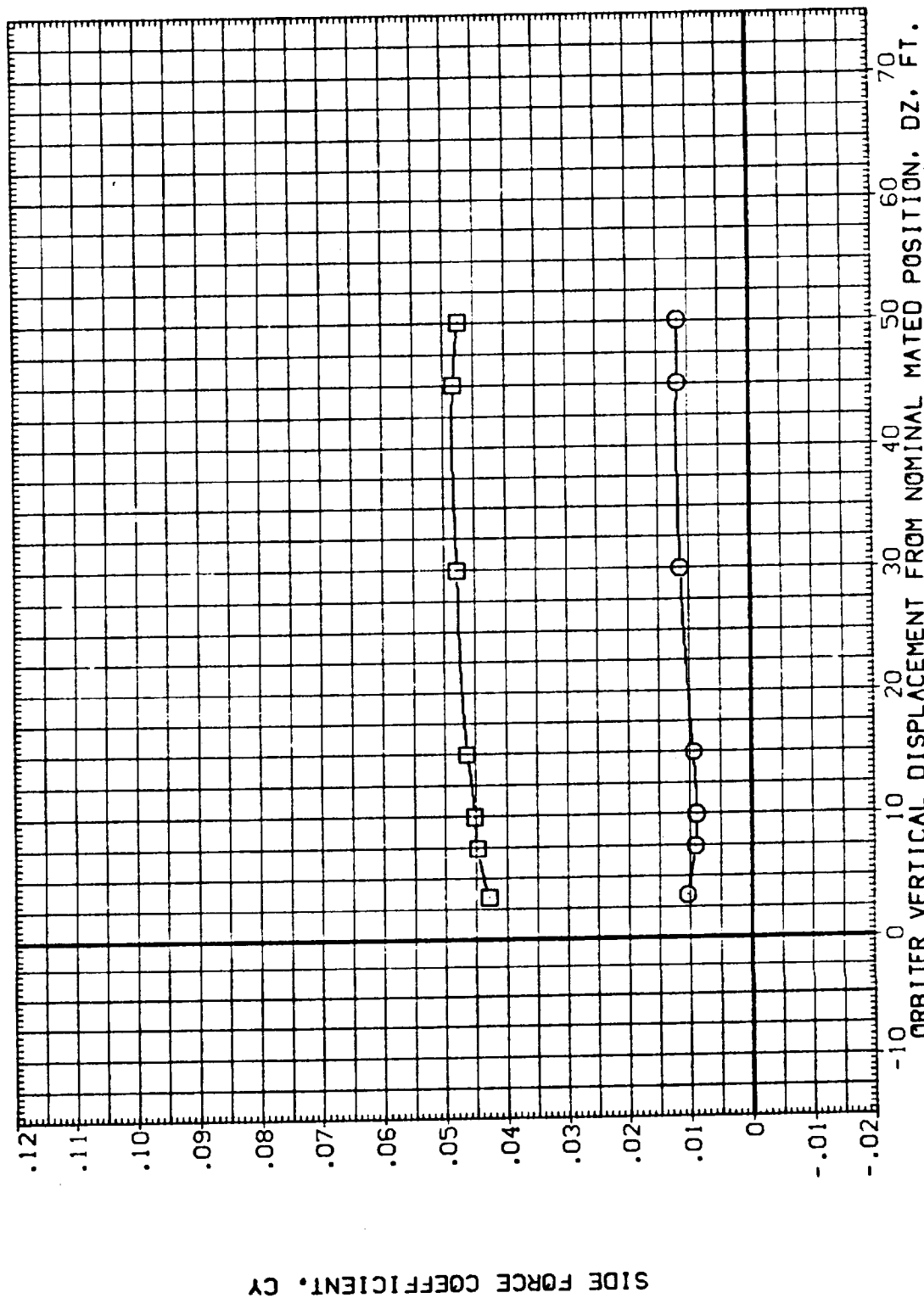


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
(A)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

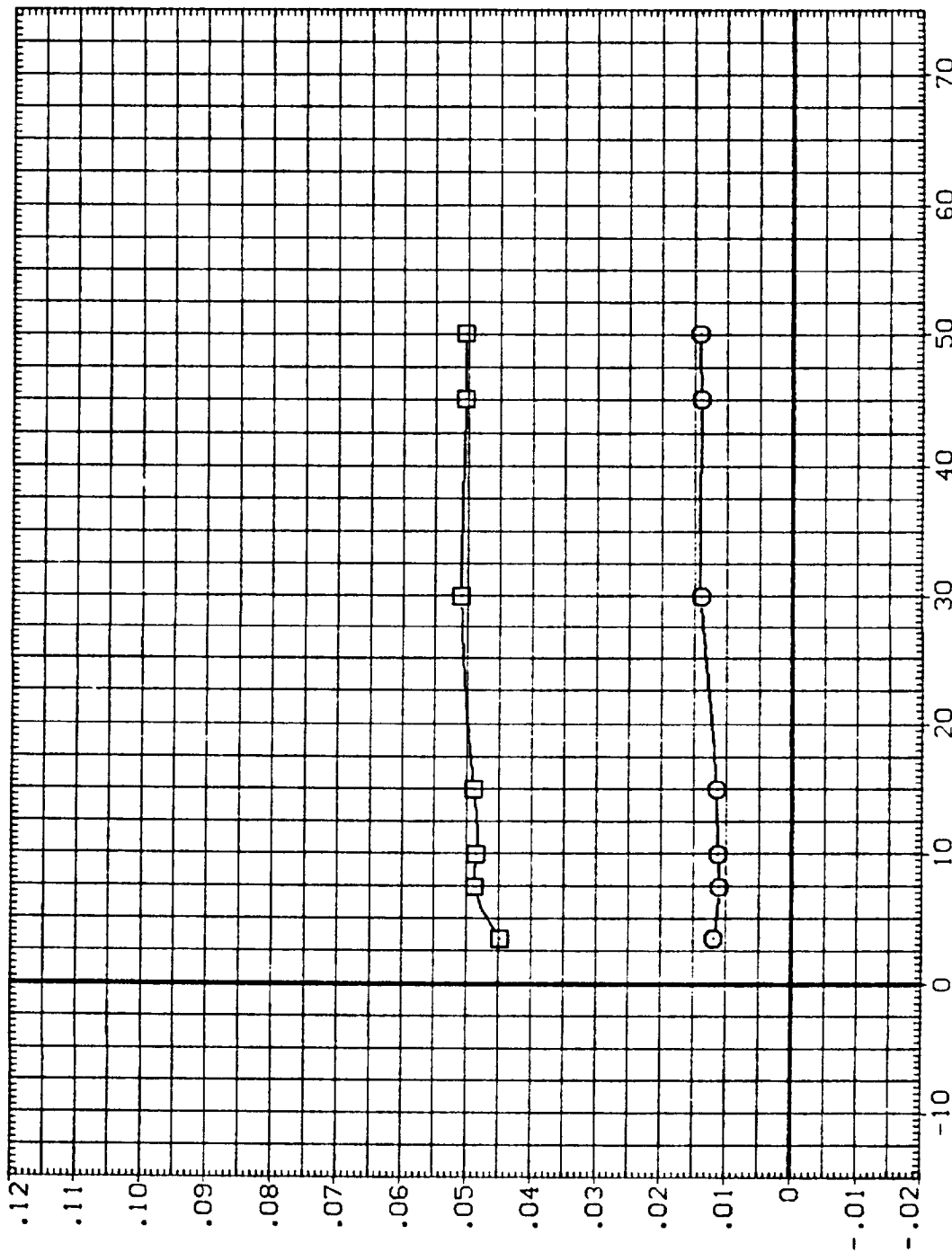
(JNH013) 8

ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

RUDDER ELEVON IORB MACH  
.000 5.000 6.000  
10.000 5.000 6.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ. FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

SIDE FORCE COEFFICIENT, CY

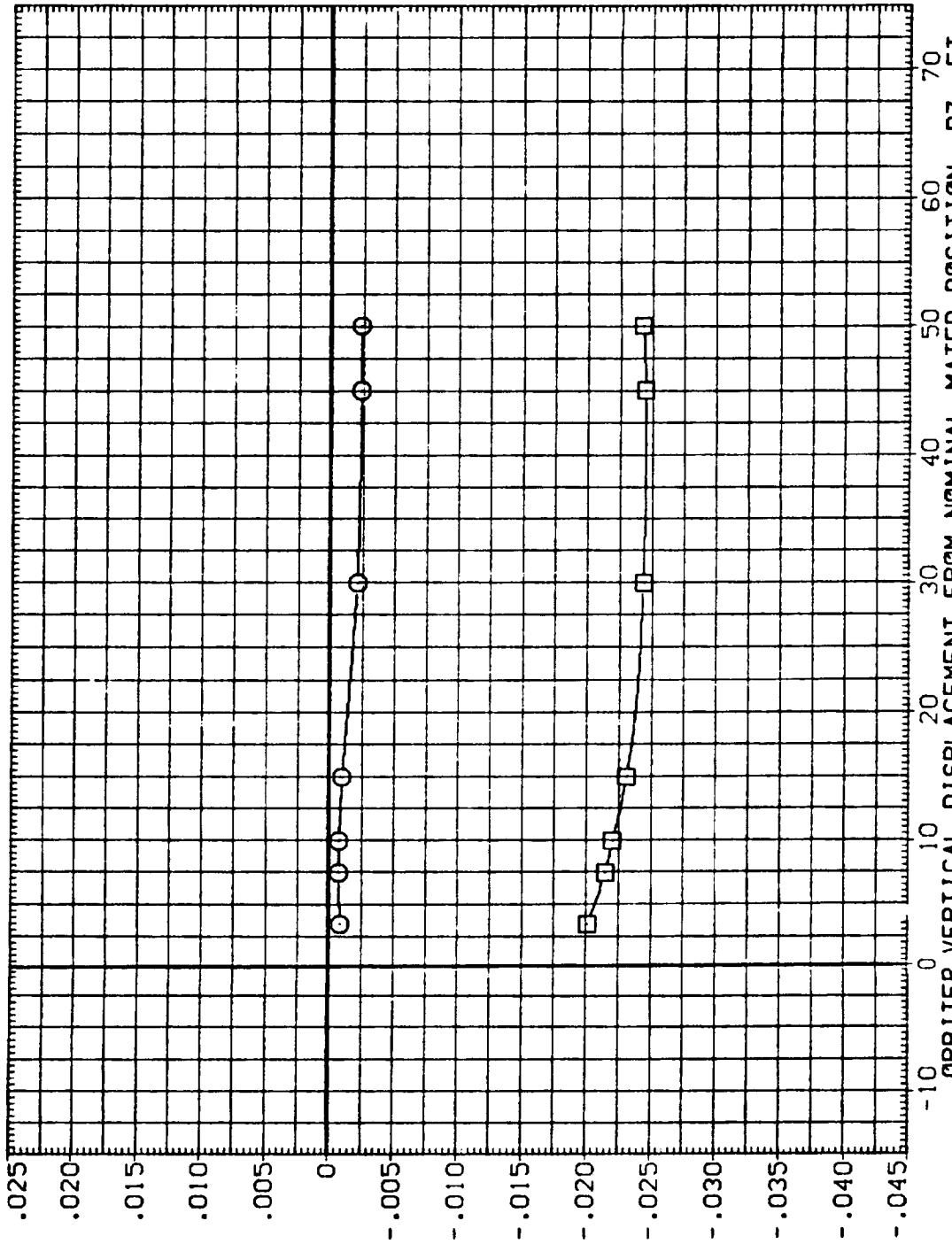


ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION. DZ, FT.

FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(JNH013)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	.000	3.000	6.000	.600	SREF 5500.0000 SQ.FT.
(JNH039)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
(A)ALPHAC= 2.00

DATA SET SYMBOL  
(JNH013)  
(JNH039)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

RUDDER  
.000  
10.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 339.9000 IN. XC  
YMRP 9000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

MACH  
.600  
.600

ELEVON  
5.000  
5.000

TORE  
6.000  
6.000

YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

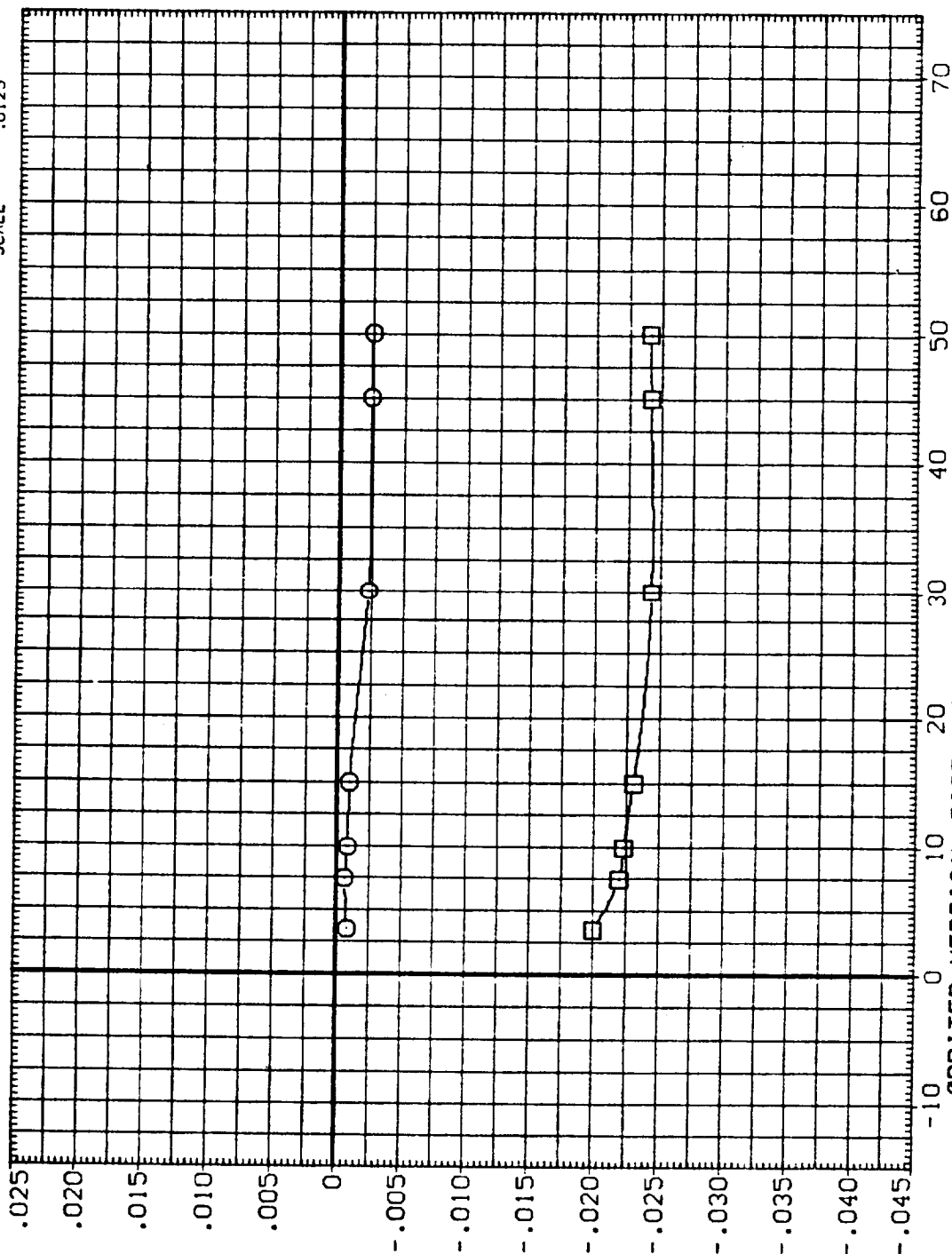


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
(B)ALPHAC= 4.00



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		RUDDER		ELEVON		IORB		MACH		REFERENCE INFORMATION			
(JNH013)	□	ARC 14-120(CA23B)	747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF	5500.0000	50. FT.					
(JNH039)	□	ARC 14-120(CA23B)	747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF	327.7800	IN.					
								BREF	2348.0400	IN.					
								XMRP	1339.9000	IN.					
								YMRP	.0000	IN.					
								ZMRP	190.7500	IN.					
								SCALE	.0125						

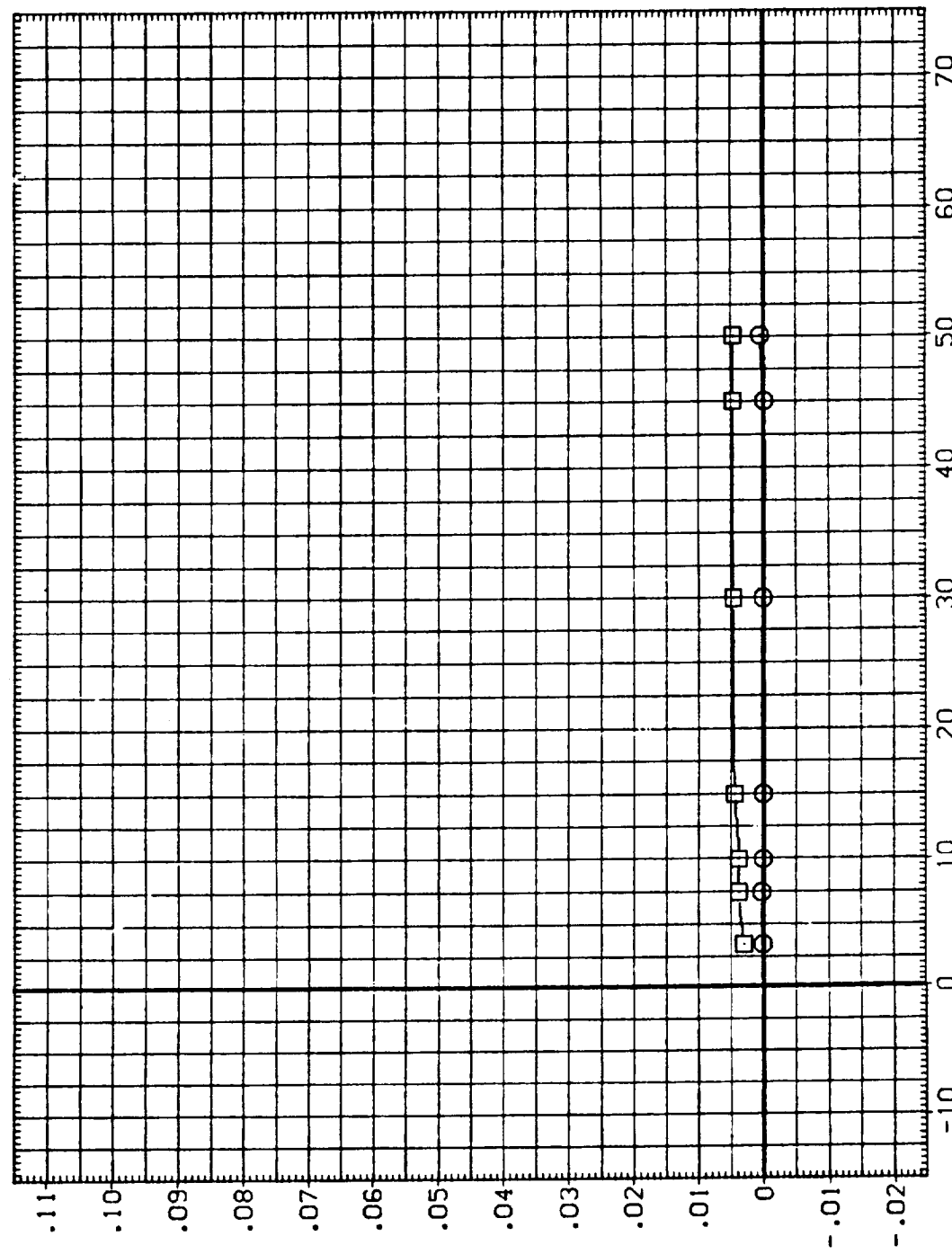


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (A)ALPHAC= 2.00  
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(JNH013)	ARC 14-120(CA238)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(JNH039)	ARC 14-120(CA238)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0125

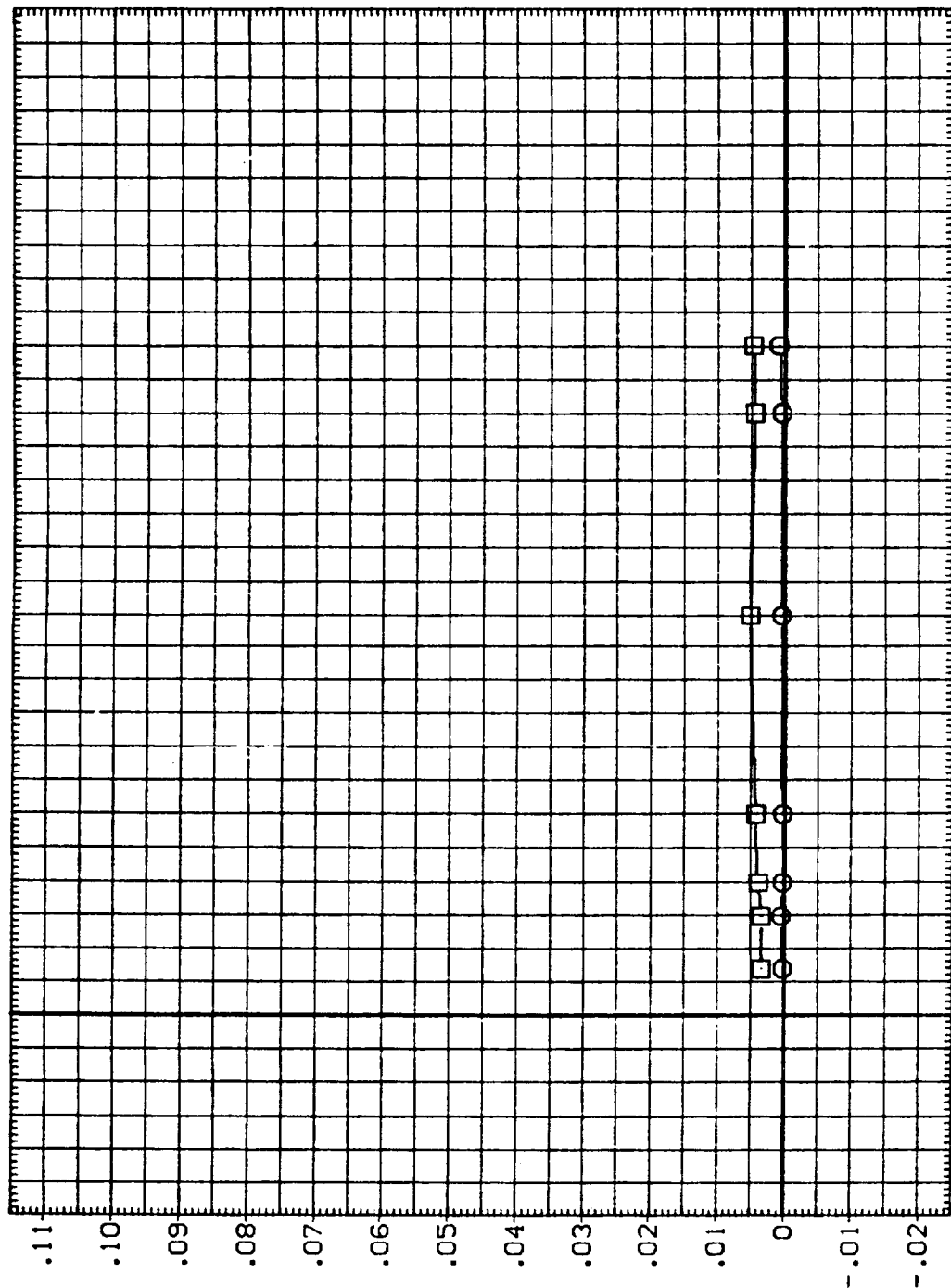


FIG. 14 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (B)ALPHAC= 4.00

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		RUDDER		ELEVON		TORB		MACH		REFERENCE INFORMATION	
(KXHO13)	□	ARC 14-120(CA23B)	747/1 AT1 02S1 (ORBITTER DATA)	.000	5.000	6.000						SREF	2690.0000
(KXHO39)	□	ARC 14-120(CA23B)	747/1 AT1 02S1 (ORBITTER DATA)	10.000	5.000	6.000						LREF	474.8100
												BREF	936.6800
												XMRP	1109.0000
												YMRP	.0000
												ZMRP	375.0000
												SCALE	.0125
													SO.FT.
													IN.
													IN. X0
													IN. Y0
													IN. Z0

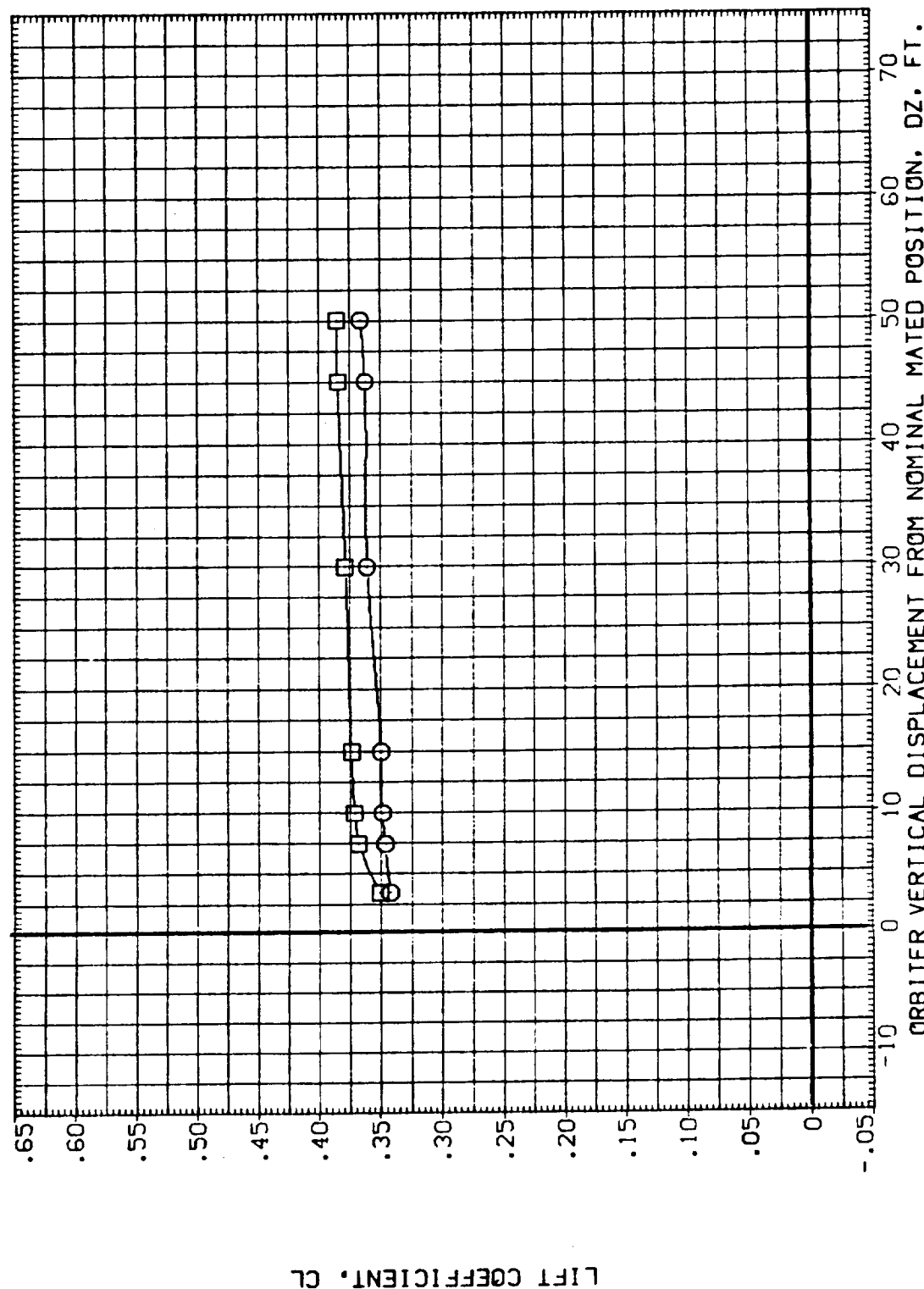


FIG. 15 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (A)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(KMH013) □  
(KMH039) □

ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB)TER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB)TER DATA)

RUDDER ELEVON TORB MACH  
.000 5.000 6.000  
10.000 5.000 .600

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

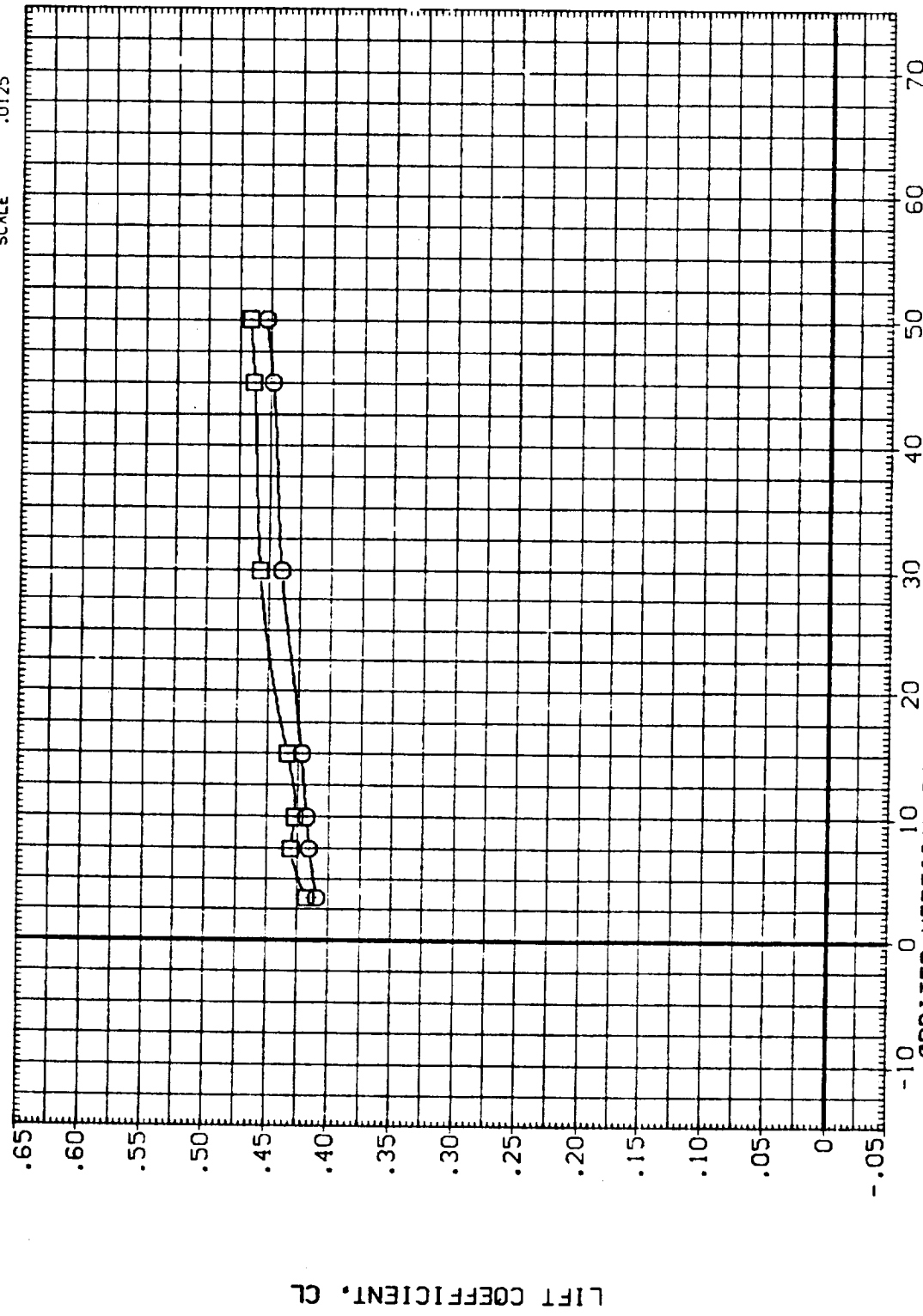


FIG. 15 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
(B)ALPHAC= 4.00  
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	TORR	MACH	REFERENCE INFORMATION
(KNH013)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITTER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(KNH039)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITTER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

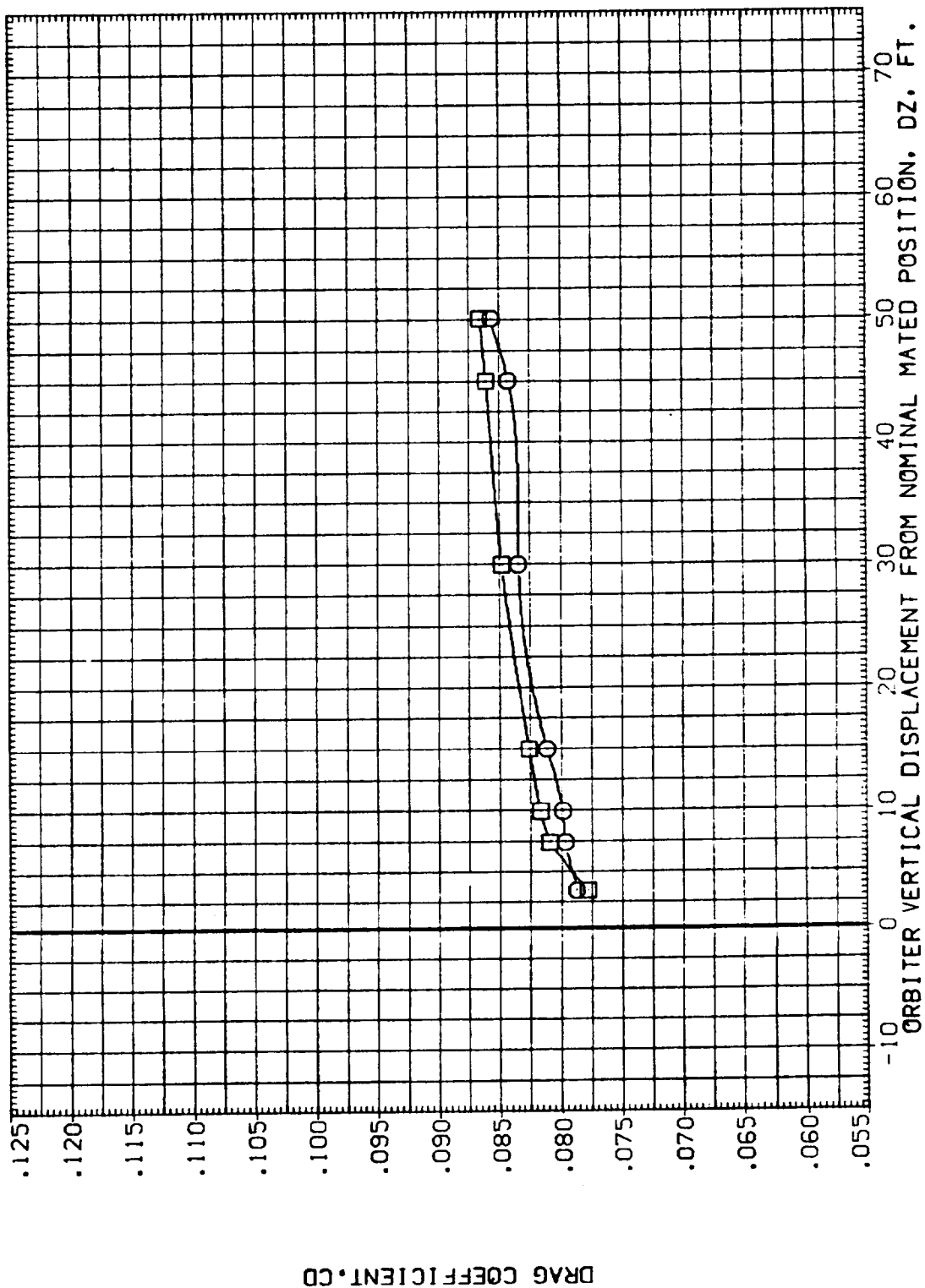


FIG. 15 EFFECT OF CARRIER RUDDER ON ORBITTER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(A)ALPHAC= 2.00

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DATA SET SYMBOL (KXHO13) (KXHO39)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
 ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

RUDDER ELEVON 10RB MACH  
 .000 5.000 .600  
 10.000 5.000 .600

REFERENCE INFORMATION  
 SREF 2690.0000 SQ. FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

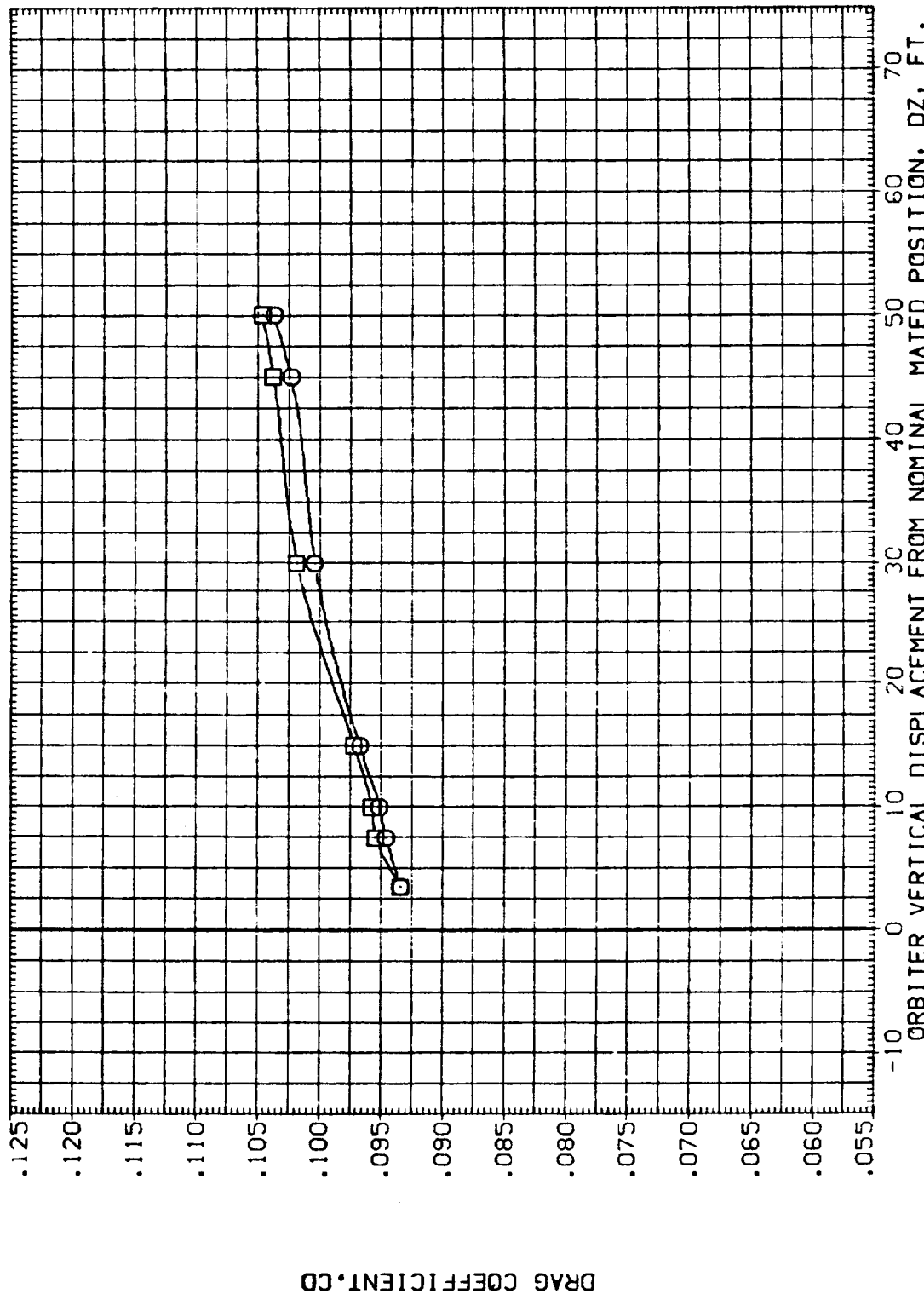


FIG. 15 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(KMH013)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SO.FT.
(KMH039)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

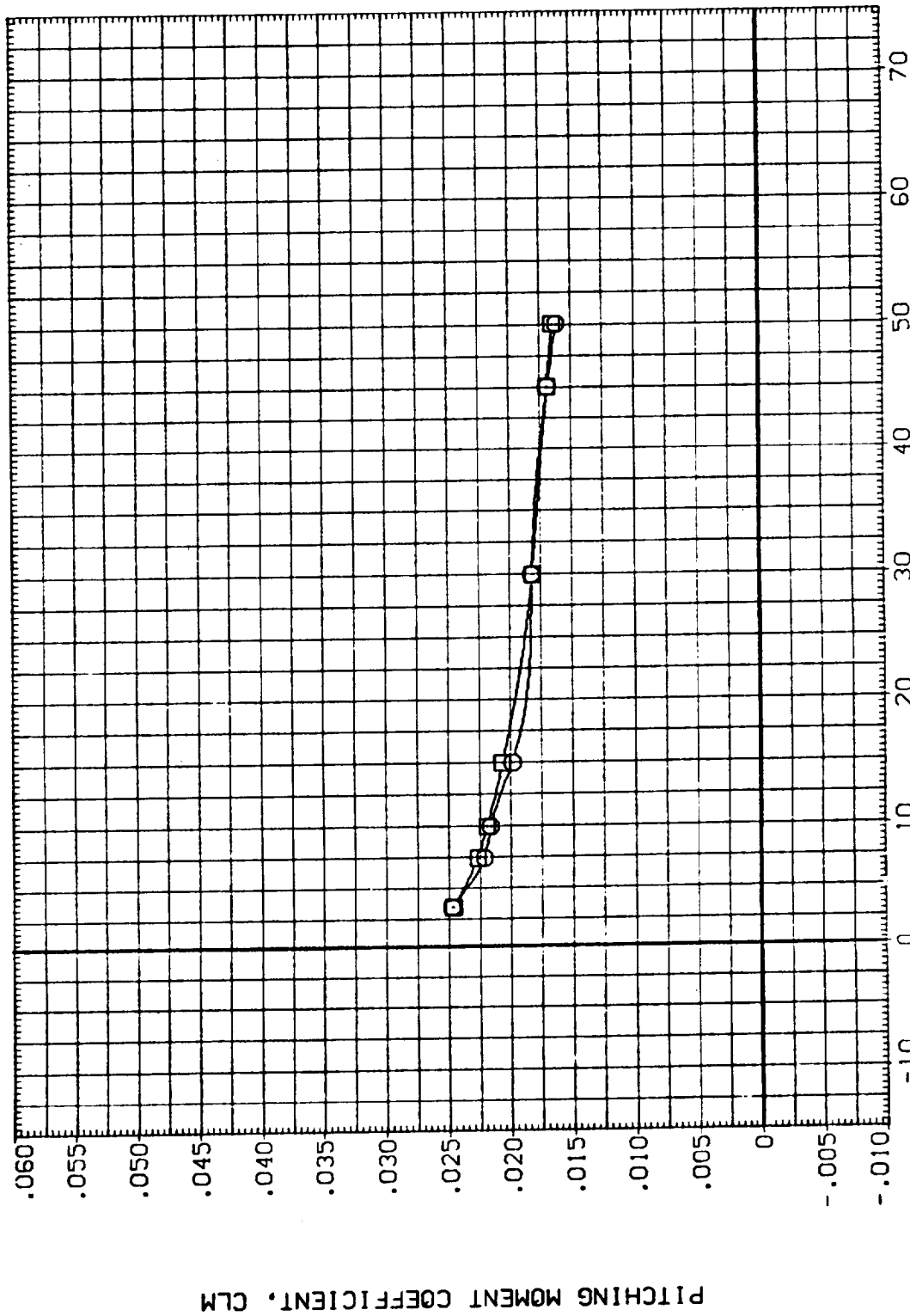


FIG. 15 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

DATA SET SYMBOL (KNH013)  
 (KNH039)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)  
 ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)

RUDDER .000  
 10.000  
 ELEVON 5.000  
 5.000  
 10RB 6.000  
 6.000  
 MACH .600  
 .600

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 YMRP 1109.0000 IN. X0  
 ZMRP .0000 IN. Y0  
 375.0000 IN. Z0  
 SCALE .0125

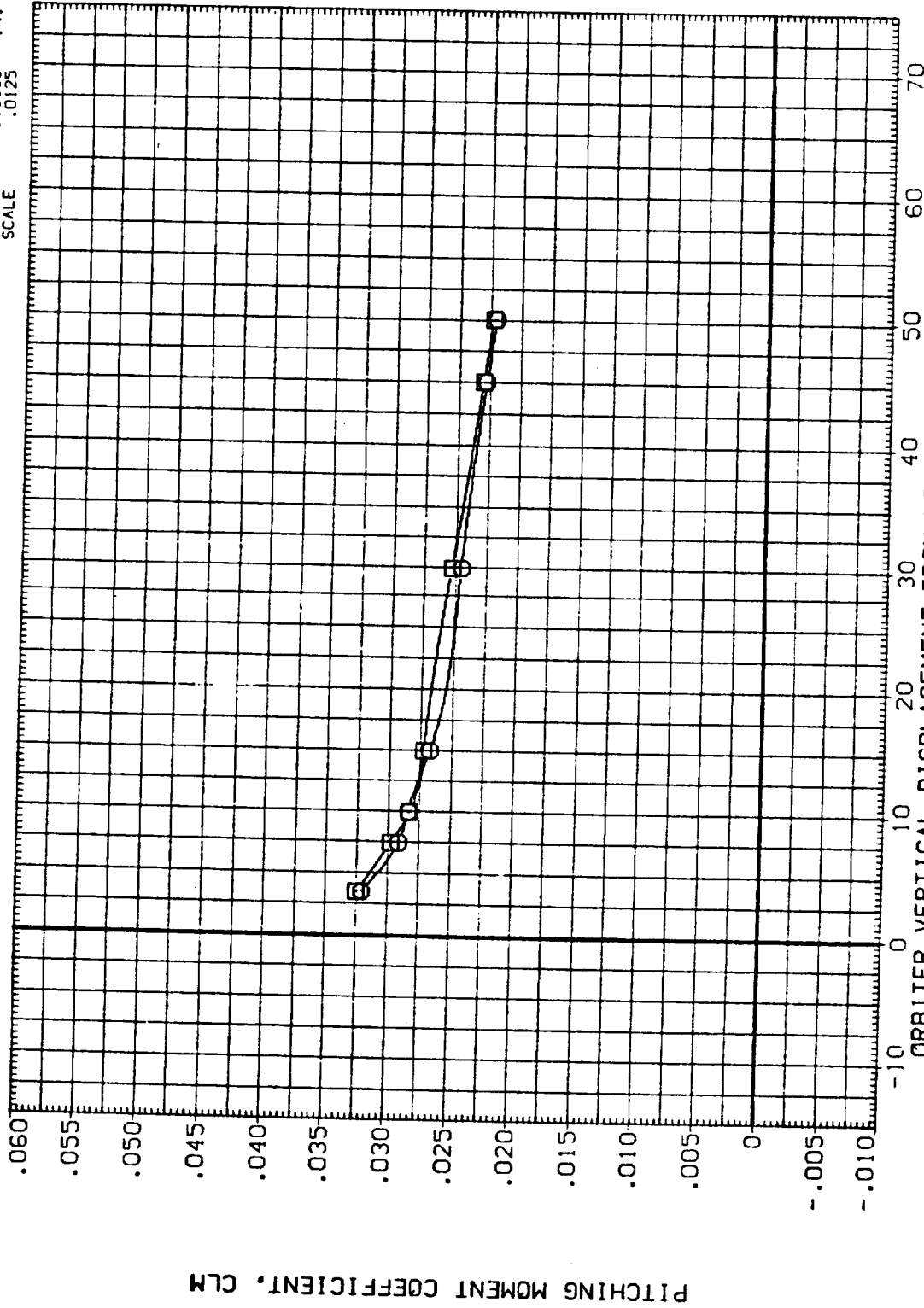


FIG. 15 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION			
(PNHX13)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	.000	5.000	6.000	.600	SREF	5500.0000	50. FT.	
(PNHX14)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF	327.7800	IN.	
(PNHX16)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	20.000	5.000	6.000	.600	BREF	2348.0400	IN.	XC
						XMRP	1339.9000	IN.	YC
						YMRP	.0000	IN.	ZC
						ZMRP	190.7500	IN.	ZC
						SCALE	.0125		

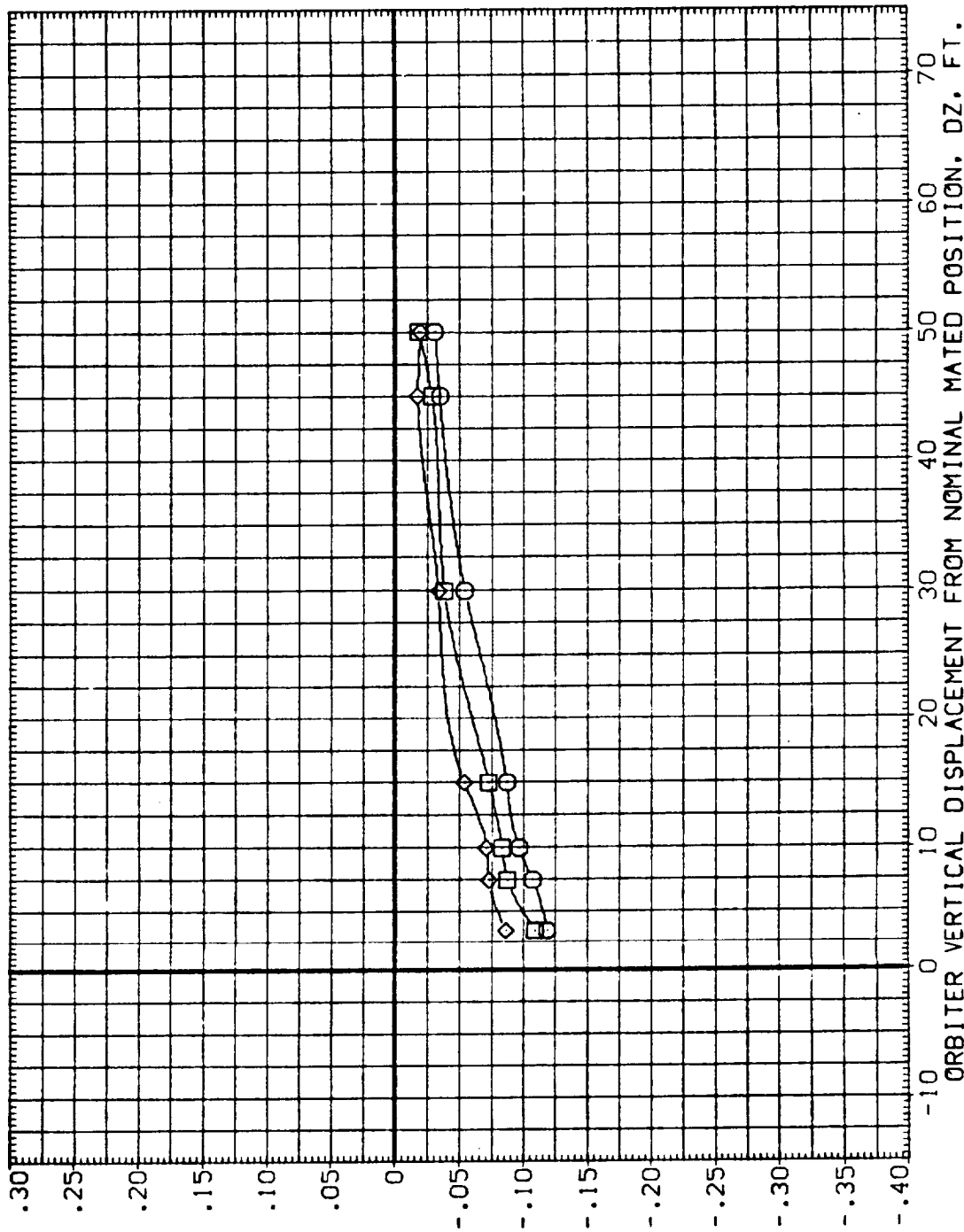


FIG. 16 EFFECT OF ORBITER DX ON CARRIER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX13)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNHX14)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
(PNHX16)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	20.000	5.000	6.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

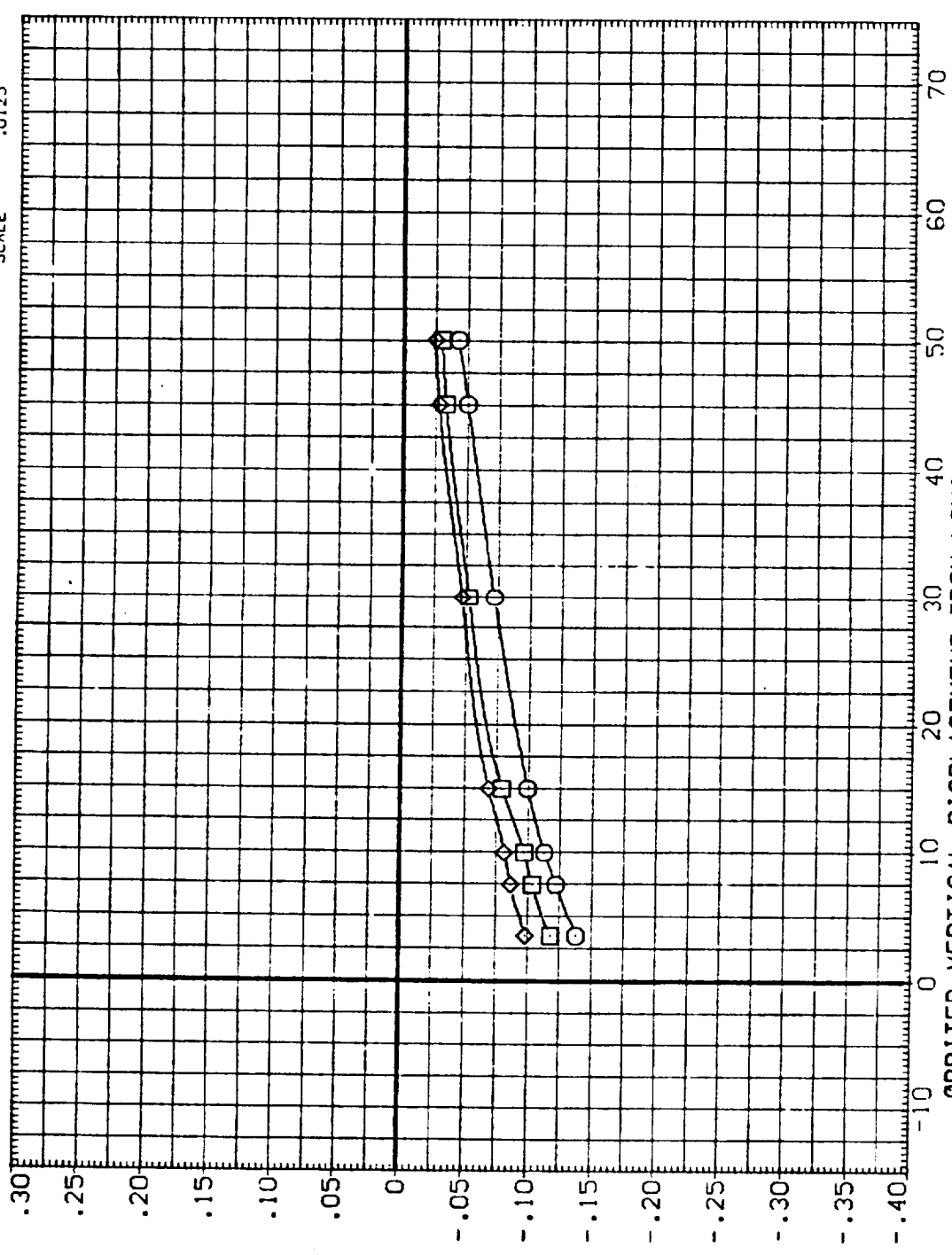


FIG. 16 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=6.0 DEG)  
 (B)ALPHAC= 4.00  
 ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.  
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INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX13)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNHX14)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
(PNHX16)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	20.000	5.000	6.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0125

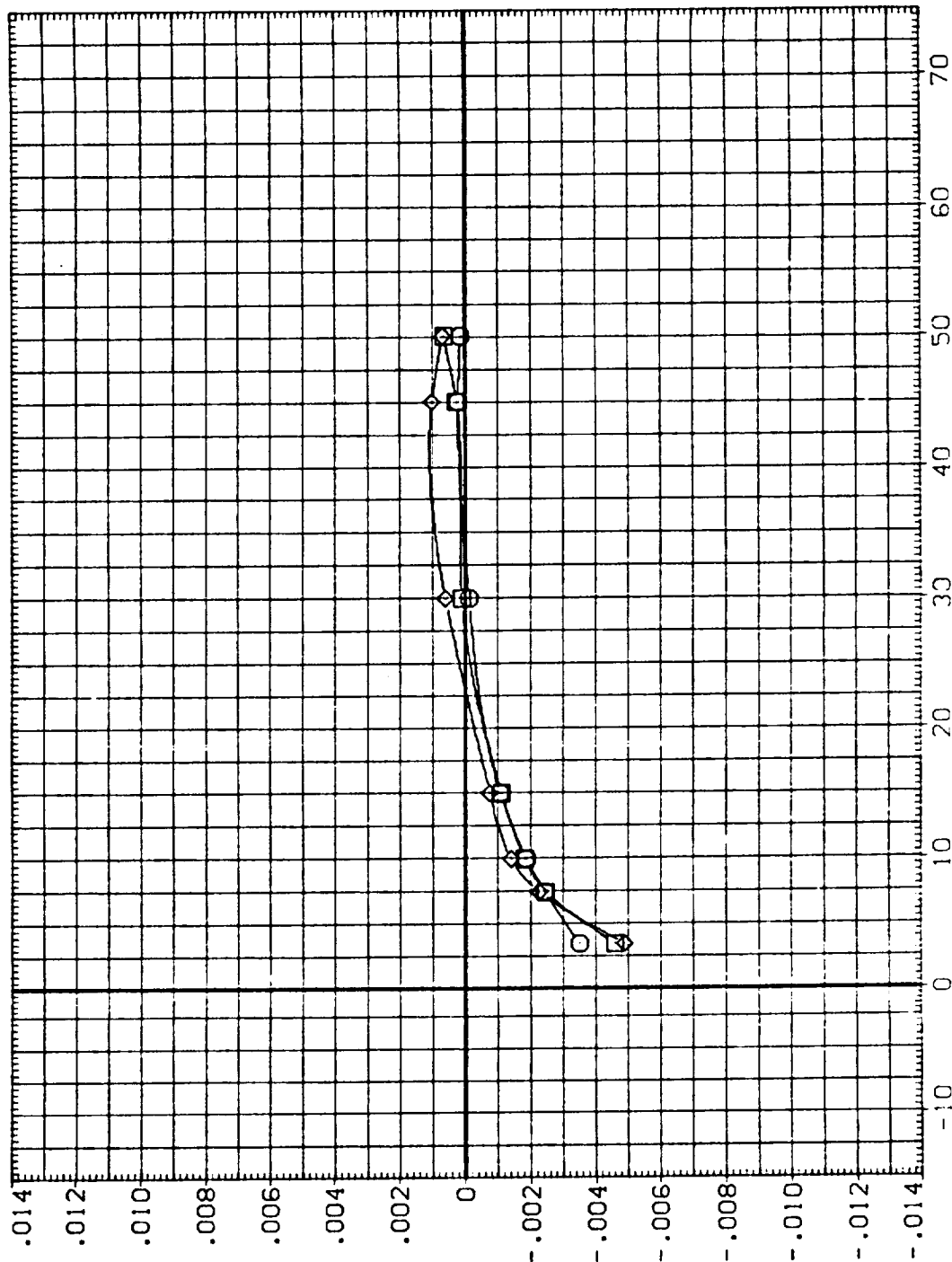


FIG. 16 EFFECT OF ORBITER DX ON CARRIER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX13)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNHX14)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
(PNHX16)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	20.000	5.000	6.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN ZC
						SCALE .0125

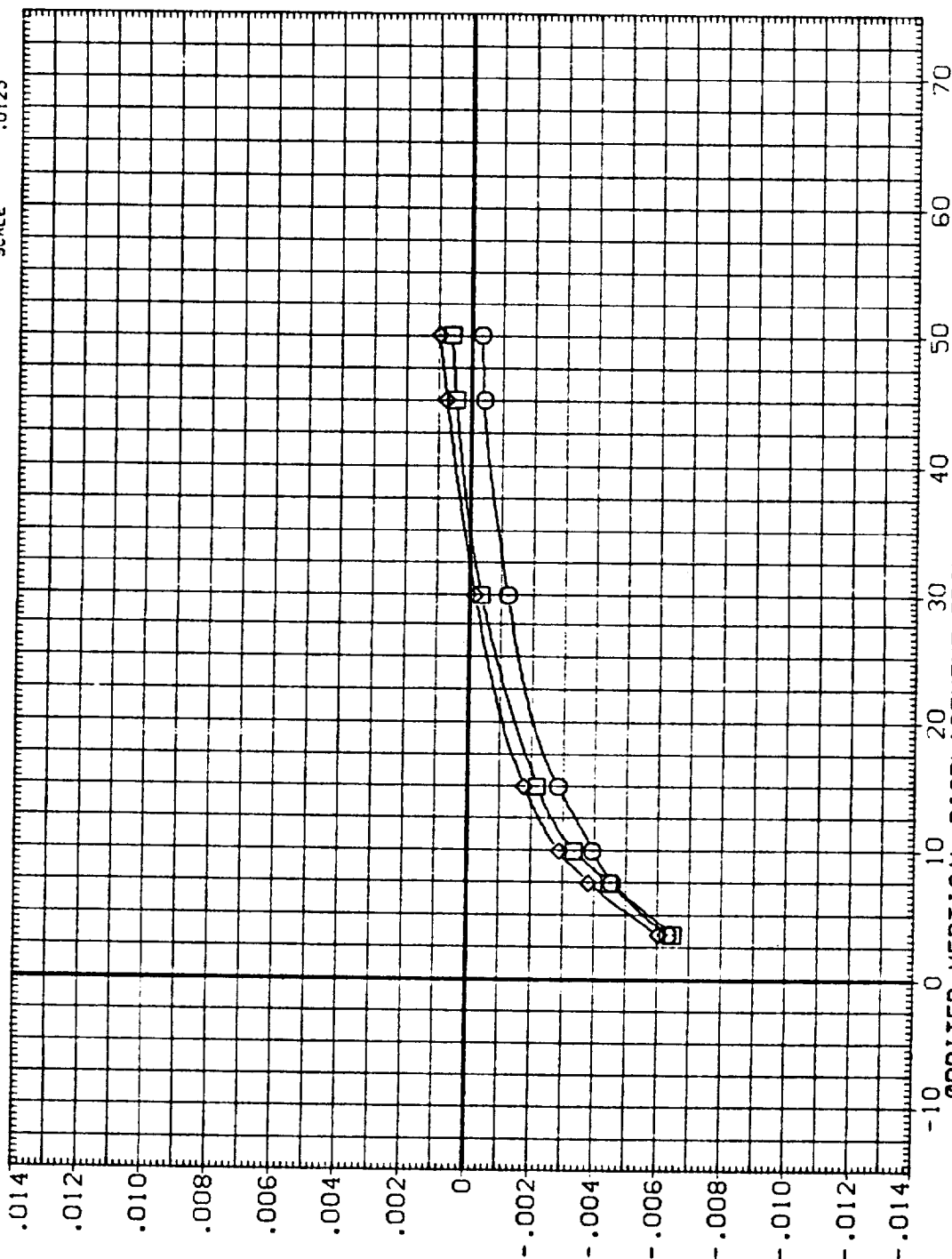


FIG. 16 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)  
(B) ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX13)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNHX14)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
(PNHX16)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	20.000	5.000	6.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

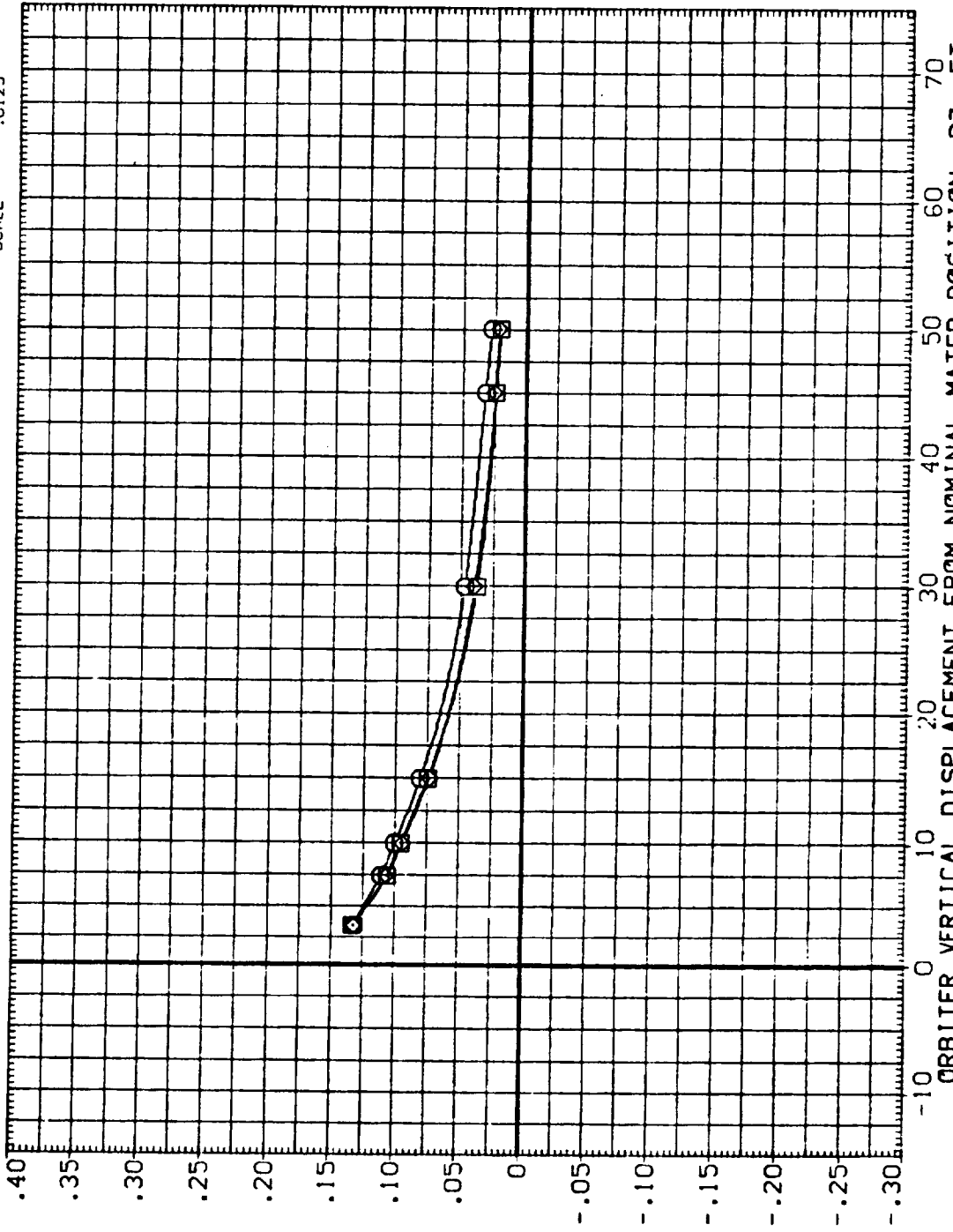


FIG. 16 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX13)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNHX14)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
(PNHX16)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	20.000	5.000	6.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

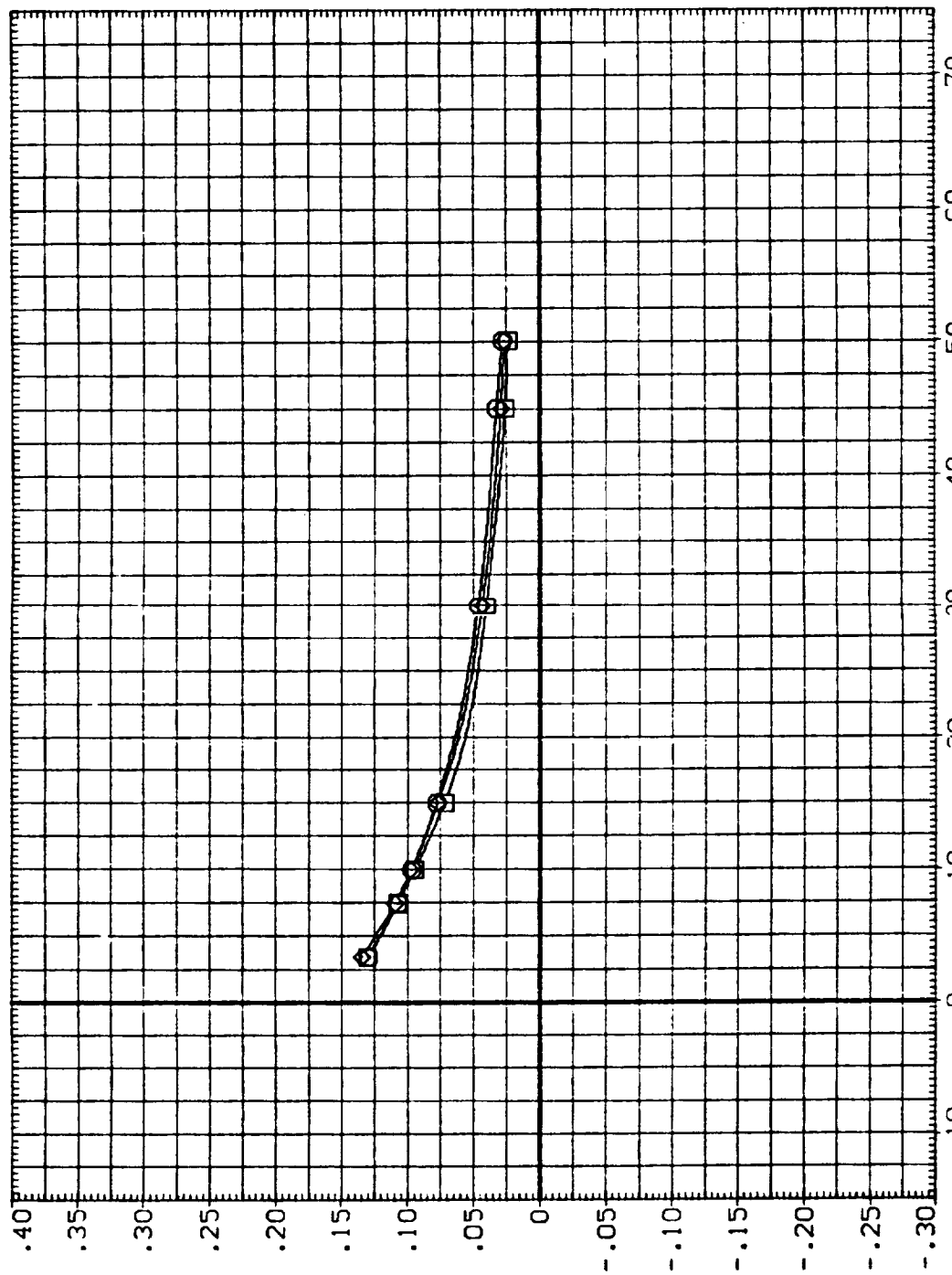
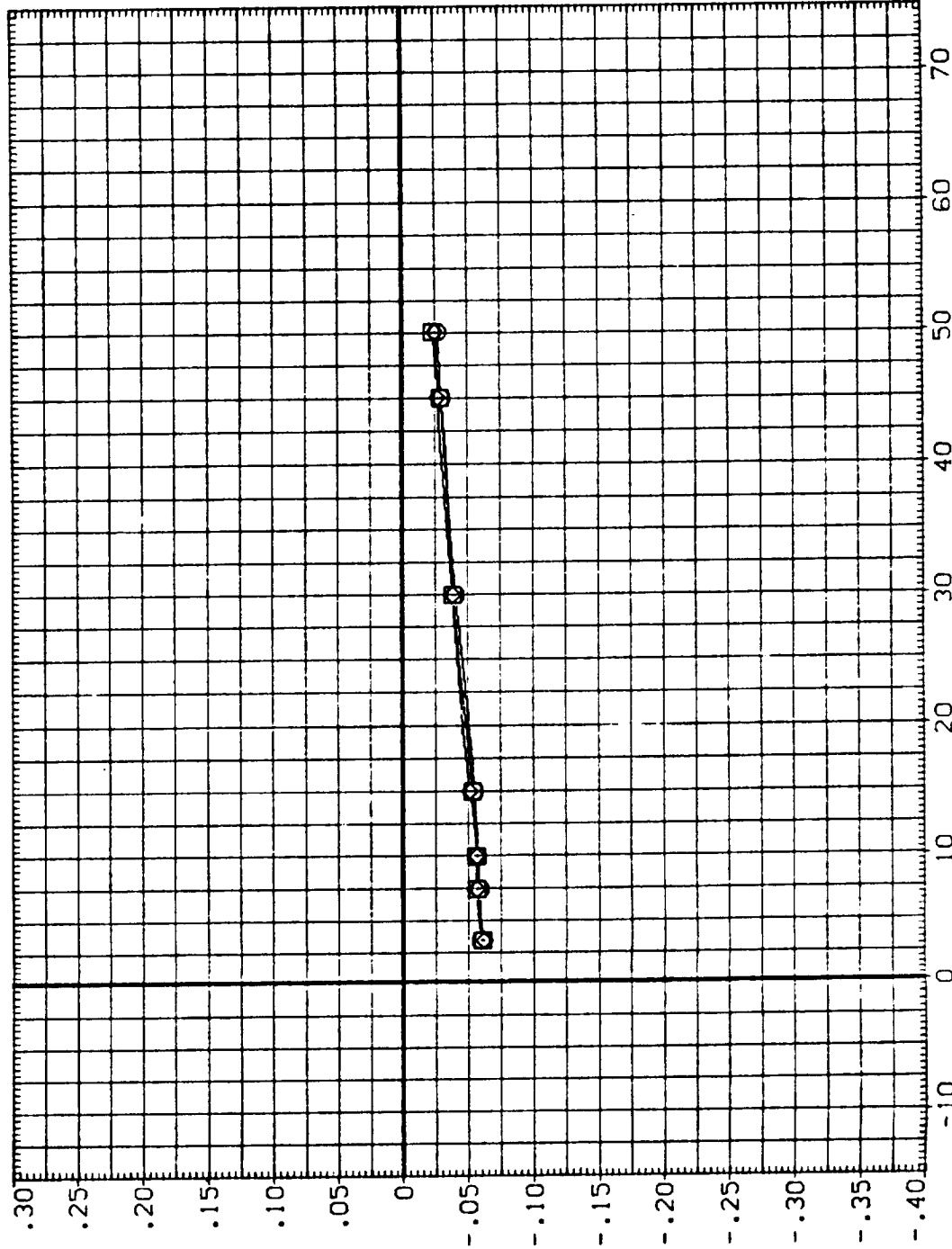


FIG. 16 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB 1/C OFF, IORB=6.0 DEG)  
 (B)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX13)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SO.FT.
(4NHX14)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
(4NHX16)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)	20.000	5.000	6.000	.600	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

FIG. 17 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NHX13) ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)  
 (4NHX14) ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)  
 (4NHX16) ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)

DX ELEVON IORB MACH REFERENCE INFORMATION  
 .000 5.000 6.000 SREF 2690.0000 SQ.FT.  
 10.000 5.000 6.000 LREF 474.8100 IN.  
 20.000 5.000 6.000 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

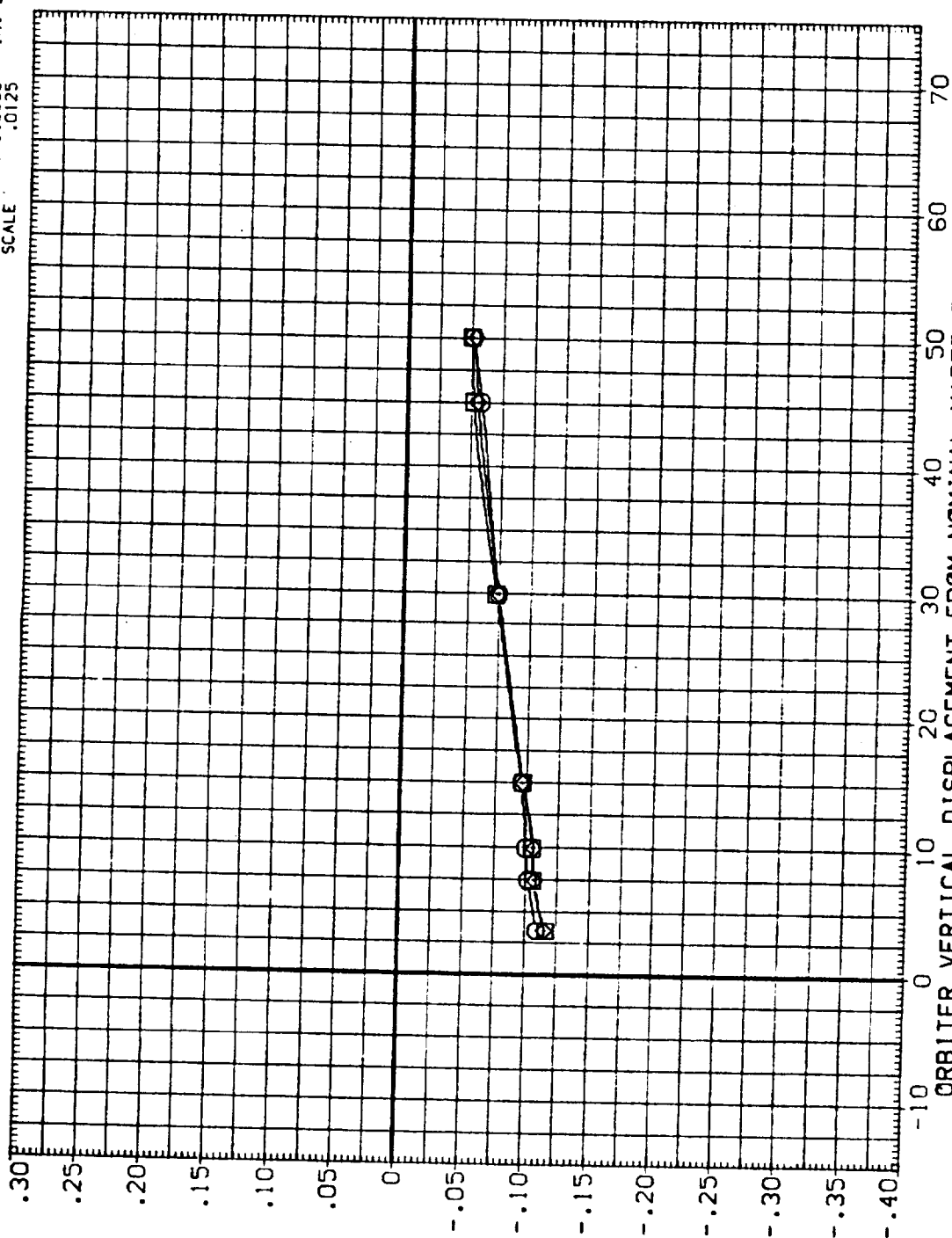


FIG. 17 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)  
 (B) ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX13)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NHX14)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
(4NHX16)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	20.000	5.000	6.000	.600	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

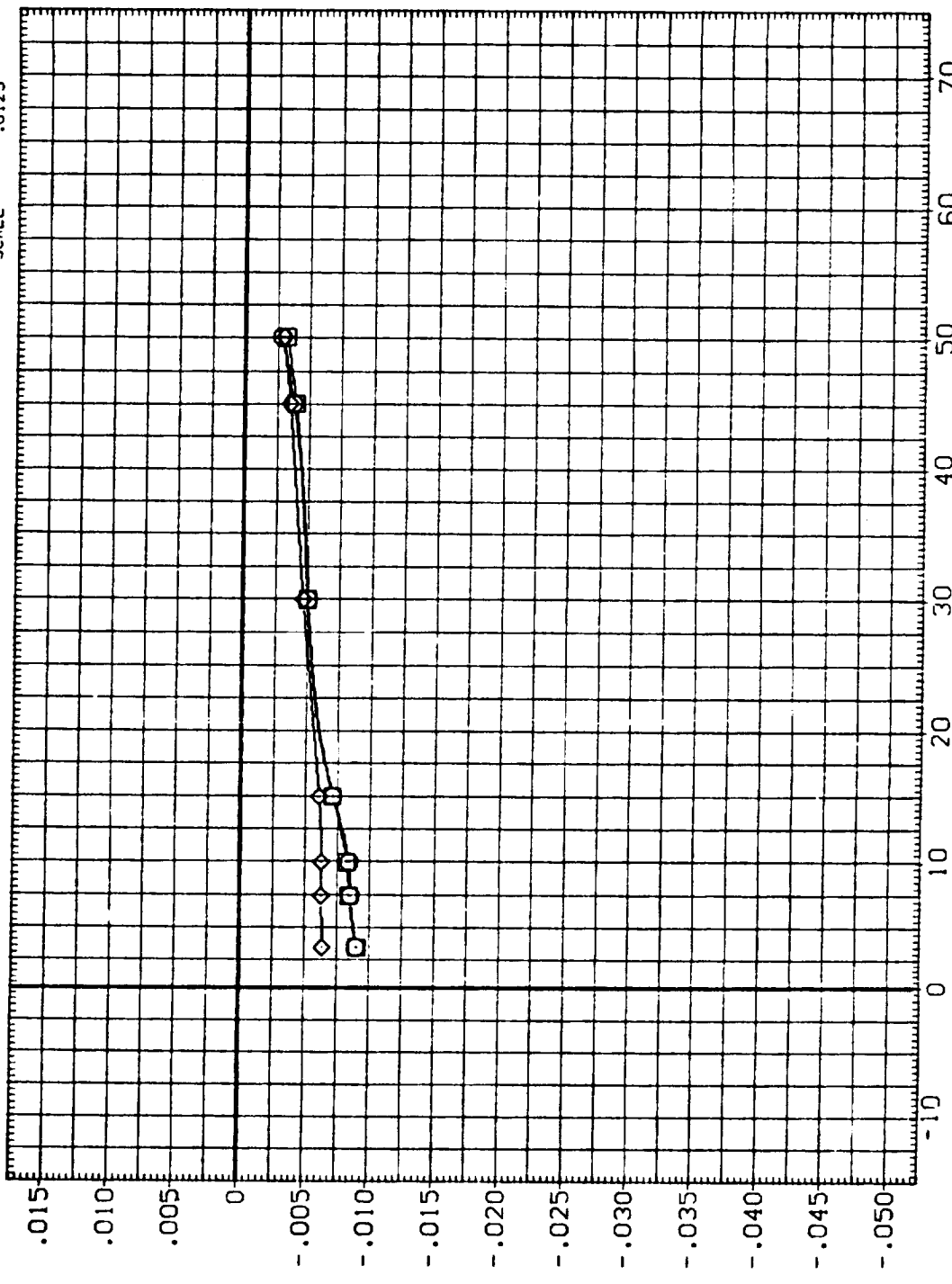


FIG. 17 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)  
 (A) ALPHAC= 2.00  
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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NHX13) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB/ITER DATA)  
 (4NHX14) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB/ITER DATA)  
 (4NHX16) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB/ITER DATA)

DX ELEVON TORB MACH REFERENCE INFORMATION  
 .000 5.000 6.000 .600 SREF 2690.0000 SQ.FT.  
 10.000 5.000 6.000 .600 LREF 474.8100 IN.  
 20.000 5.000 6.000 .600 BRFP 936.6800 IN.  
 YMRP 1109.0000 IN. X0  
 ZMRP 375.0000 IN. Y0  
 SCALE .0125 IN. Z0

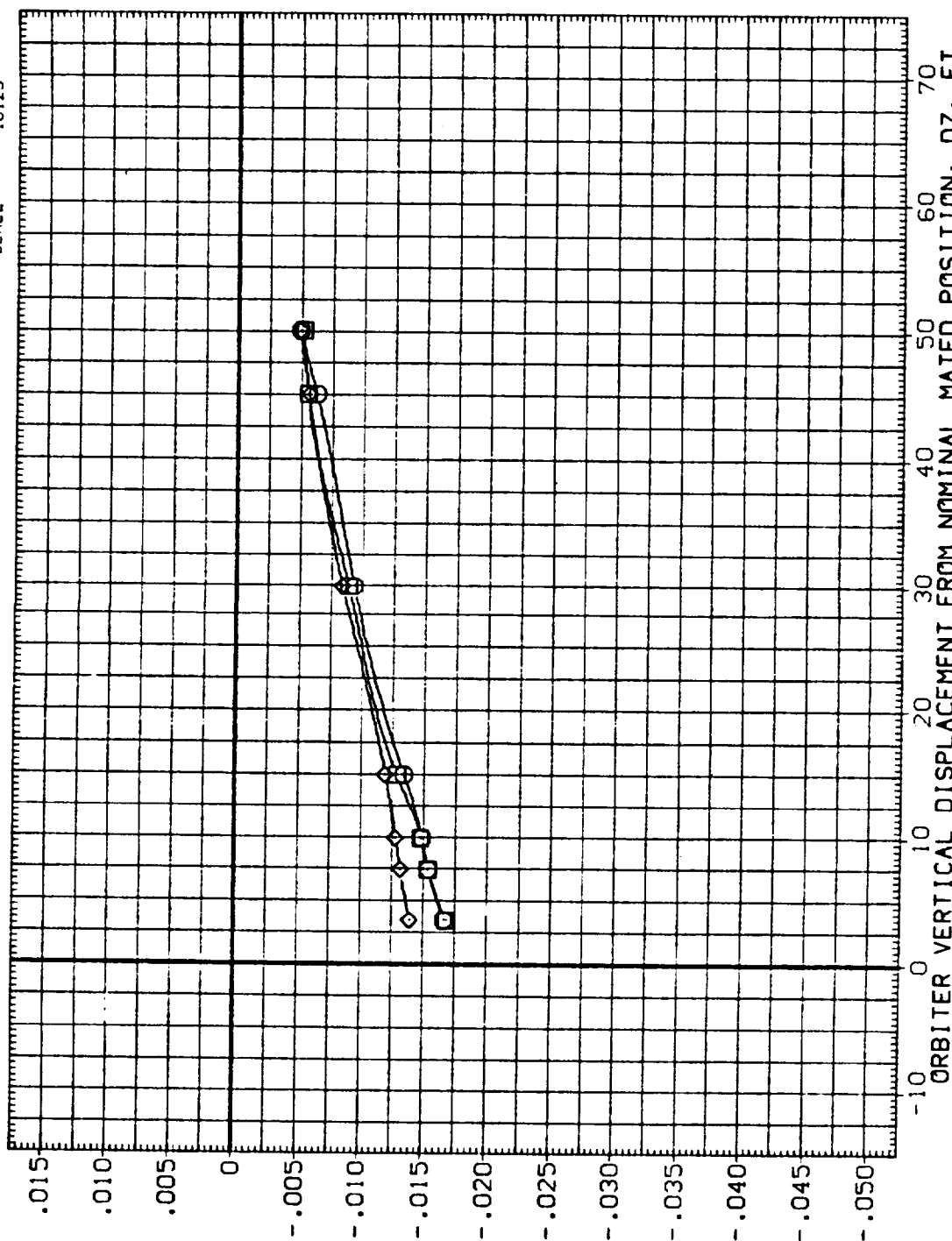


FIG. 17 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF., TORB=6.0 DEG)  
 (B) ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX13)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NHX14)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
(4NHX16)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	20.000	5.000	6.000	.600	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

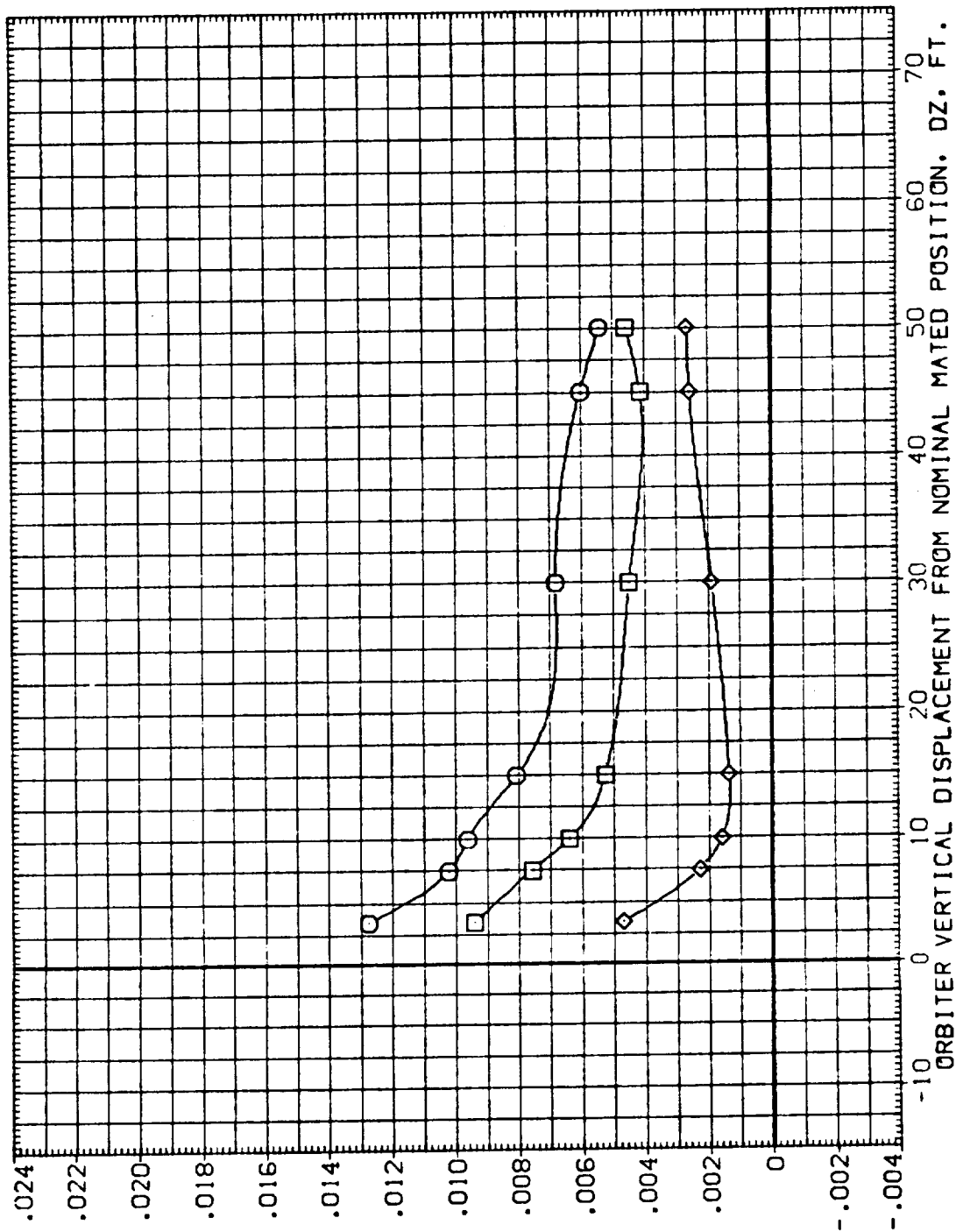


FIG. 17 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4HX13)  
(4HX14)  
(4HX16)

ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

DX  
.000  
10.000  
20.000

ELEVON  
5.000  
5.000  
5.000

IORB  
6.000  
6.000  
6.000

MACH  
.600  
.600  
.600

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP 375.0000 IN. Y0  
SCALE .0125

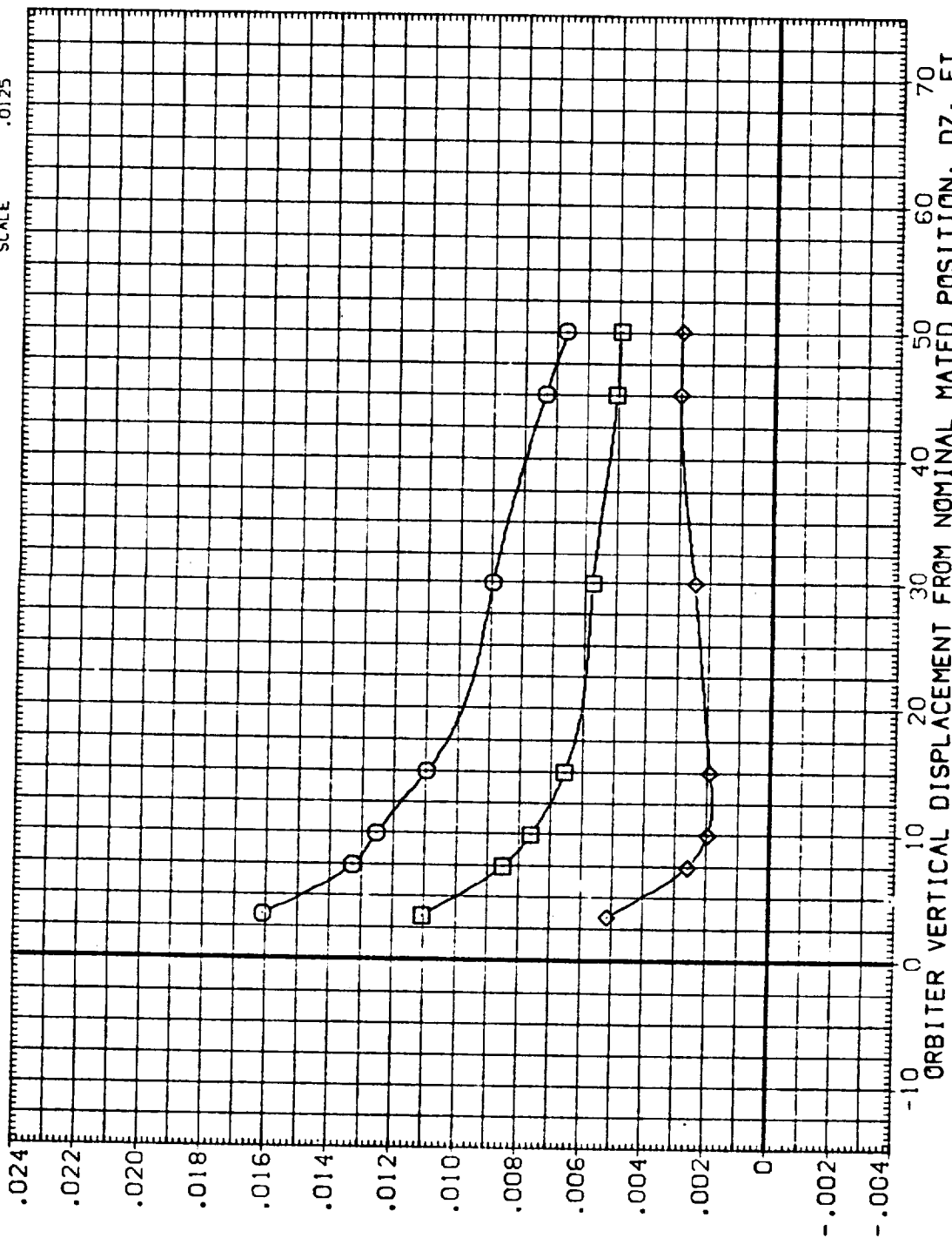


FIG. 17 EFFECT OF ORBITER DX ON ORBITER(STAB= 5.0 DEG.,ORB T/C OFF,IO RB=6.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX10)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	.000	5.000	8.000	.600	SREF 5500.0000 SQ.FT.
(PNHX15)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	10.000	5.000	8.000	.600	LREF 327.7800 IN.
(PNHX17)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	20.000	5.000	8.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

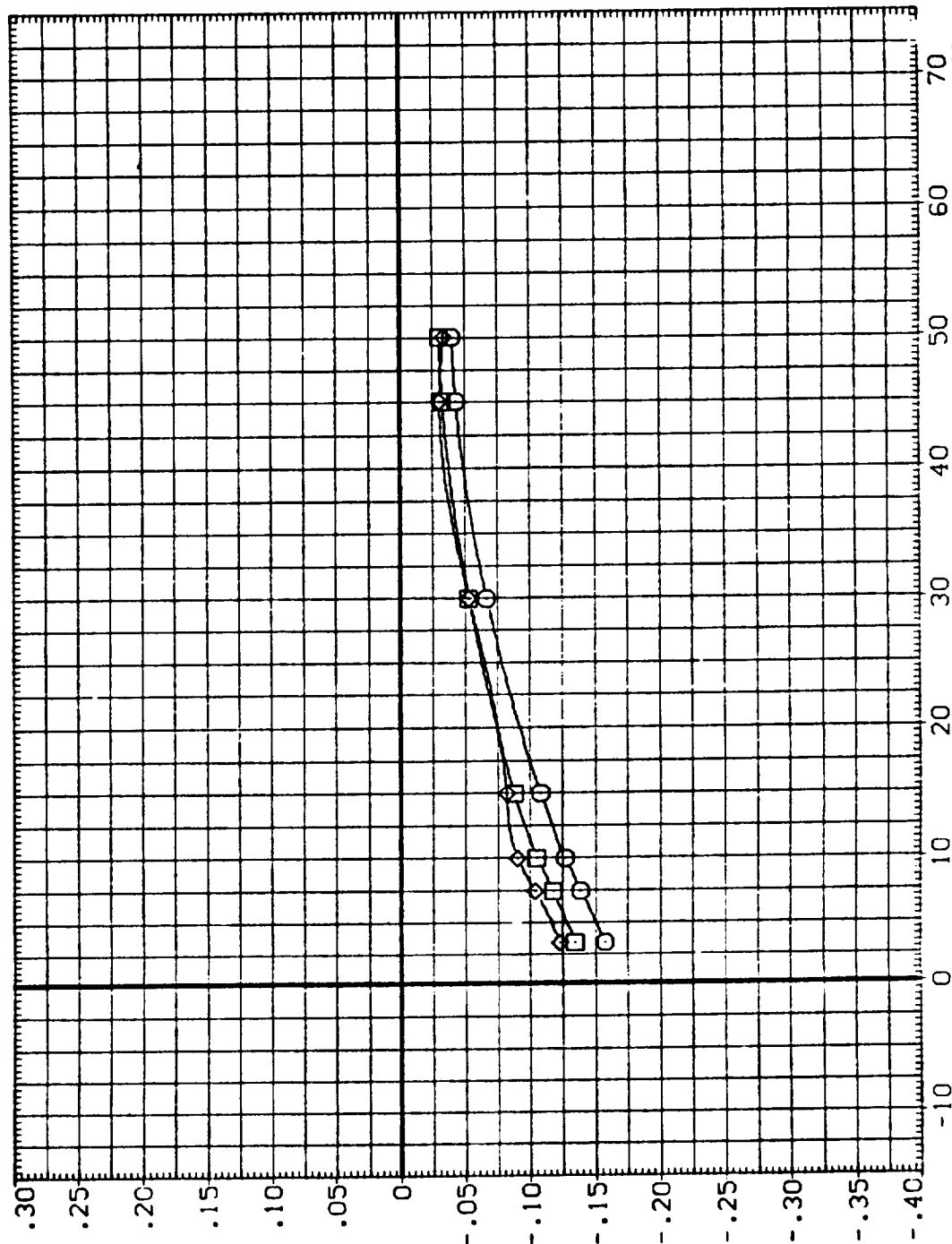


FIG. 18 EFFECT OF ORBITER DX ON CARRIER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(PNHX10)  
(PNHX15)  
(PNHX17)

ARC 14-120(CA23B)  
ARC 14-120(CA23B)  
ARC 14-120(CA23B)

747/1 AT1  
747/1 AT1  
747/1 AT1

02S1 (CARRIER DATA)  
02S1 (CARRIER DATA)  
02S1 (CARRIER DATA)

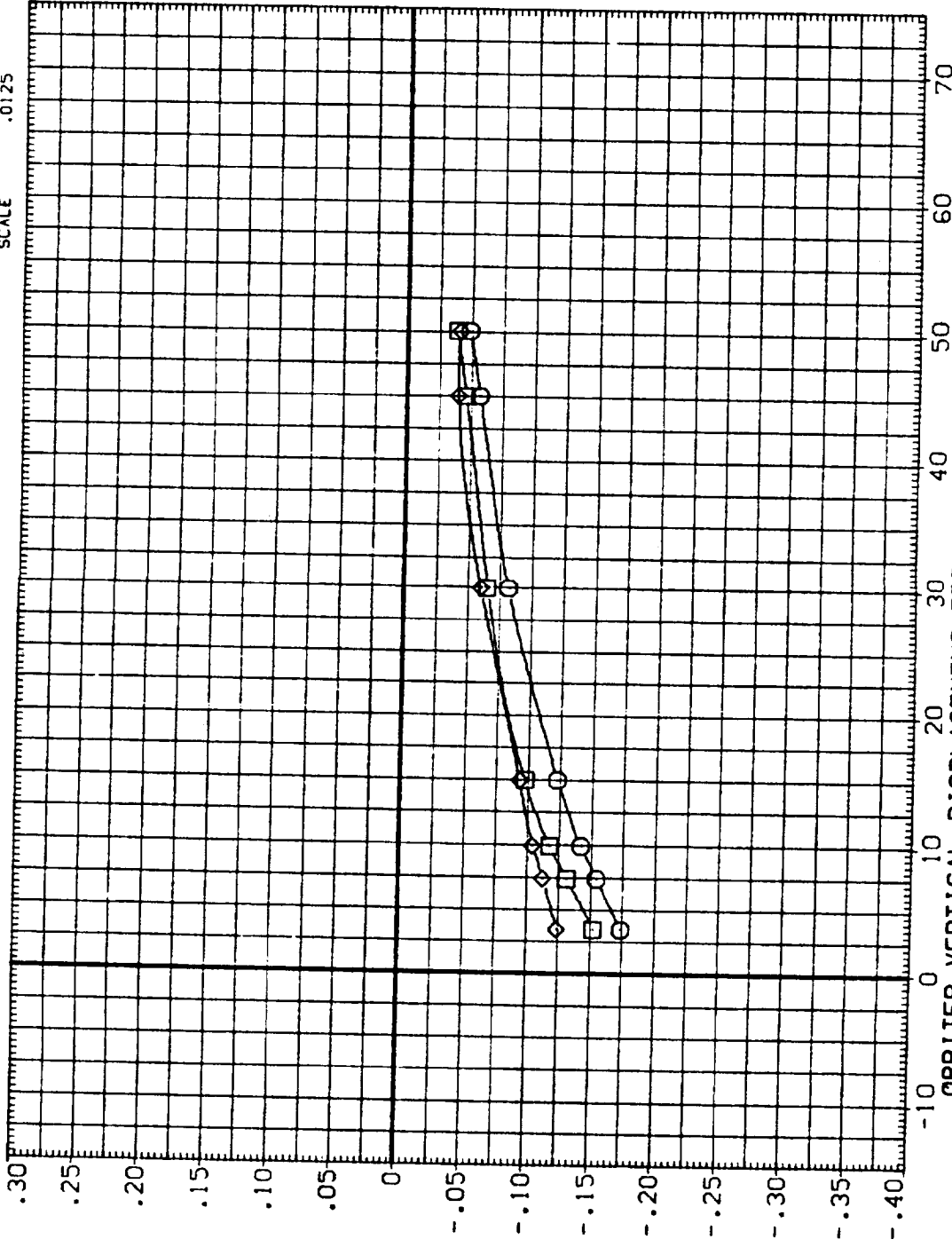
DX  
.000  
10.000  
20.000

ELEVON  
5.000  
5.000  
5.000

IORB  
8.000  
8.000  
8.000

MACH  
.600  
.600  
.600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

FIG. 18 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX10)	ARC 14-120(CA23B) 747/I AT1 Q2S1 (CARRIER DATA)	.000	5.000	8.000	.600	SREF 5500.0000 50.FT.
(PNHX15)	ARC 14-120(CA23B) 747/I AT1 Q2S1 (CARRIER DATA)	10.000	5.000	8.000	.600	LREF 327.7800 IN.
(PNHX17)	ARC 14-120(CA23B) 747/I AT1 Q2S1 (CARRIER DATA)	20.000	5.000	8.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

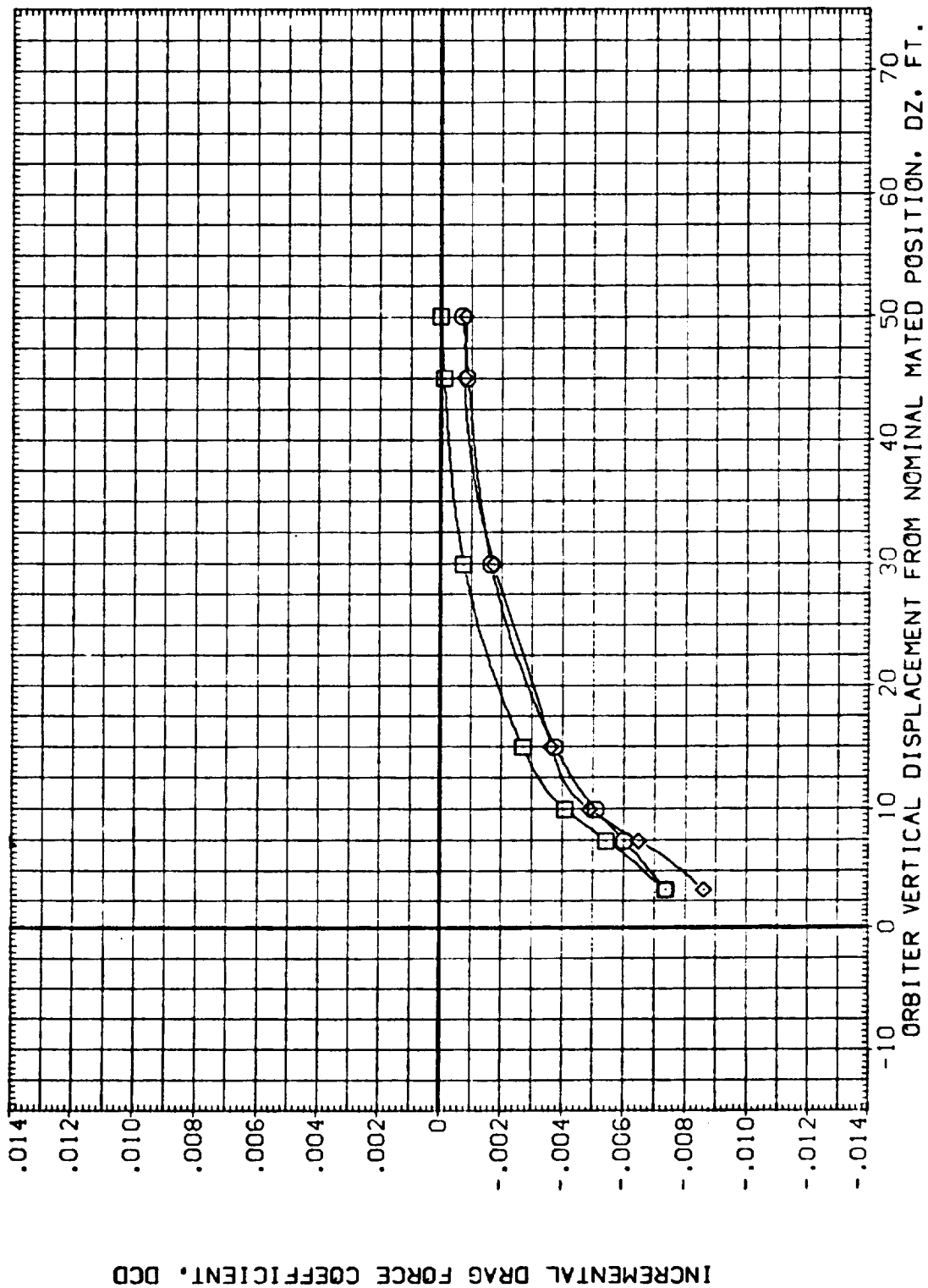


FIG. 18 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN. XC
XMRP	1339.9000 IN. YC
YMRP	.0000 IN. ZC
ZMRP	190.7500 IN. ZC
SCALE	.0125

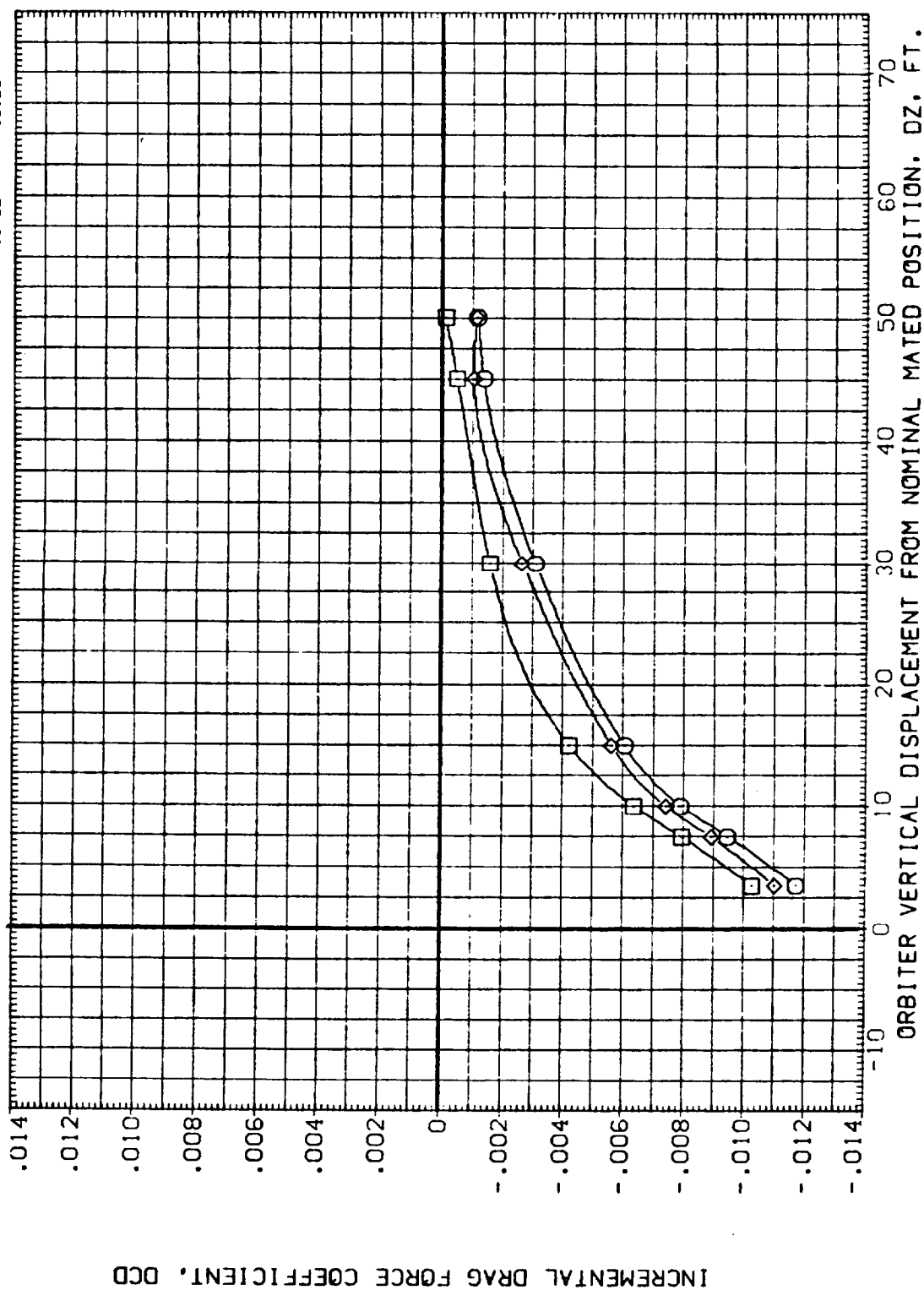


FIG. 18 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=8.0 DEG)

(B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	ICRB	MACH	REFERENCE INFORMATION
(PNHX10)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	8.000	.600	SREF 5500.0000 SQ.FT.
(PNHX15)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	8.000	.600	LREF 327.7800 IN.
(PNHX17)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	20.000	5.000	8.000	.600	BREF 2348.0400 IN.
						YMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						SCALE 190.7500 IN ZC
						.0125

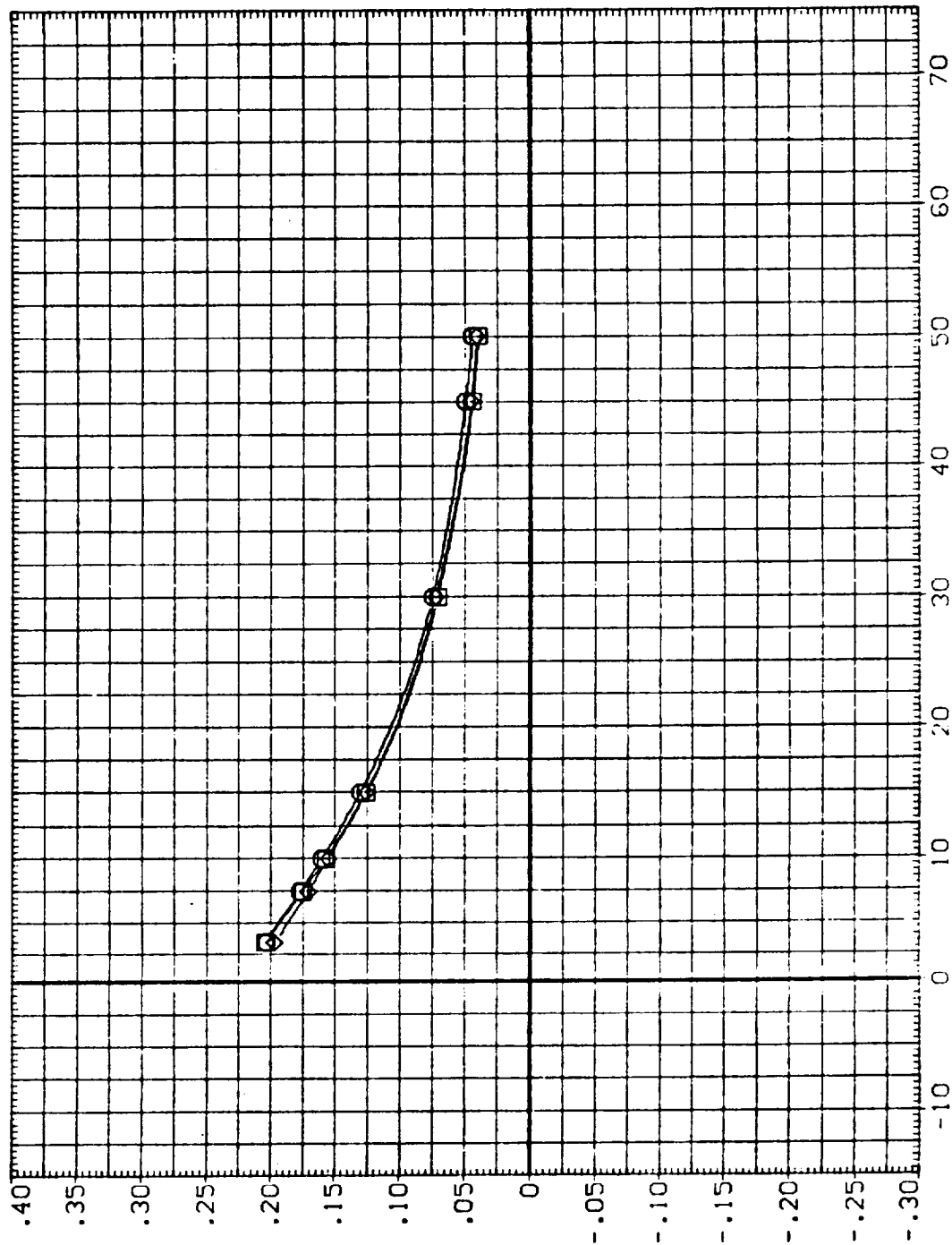


FIG. 18 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, ICRB=8.0 DEG)

DATA SET SYMBOL  
(PNHX10)  
(PNHX15)  
(PNHX17)



CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 Q251  
ARC 14-120(CA23B) 747/1 AT1 Q251  
ARC 14-120(CA23B) 747/1 AT1 Q251

(CARRIER DATA)  
(CARRIER DATA)  
(CARRIER DATA)

DX  
.000  
10.000  
20.000

ELEVON  
5.000  
5.000  
5.000

IORB  
8.000  
8.000  
8.000

MACH  
.600  
.600  
.600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2349.0400 IN.  
XMRP 1339.9000 IN.  
YMRP .0000 IN.  
ZMRP 192.7500 IN.  
SCALE .0125

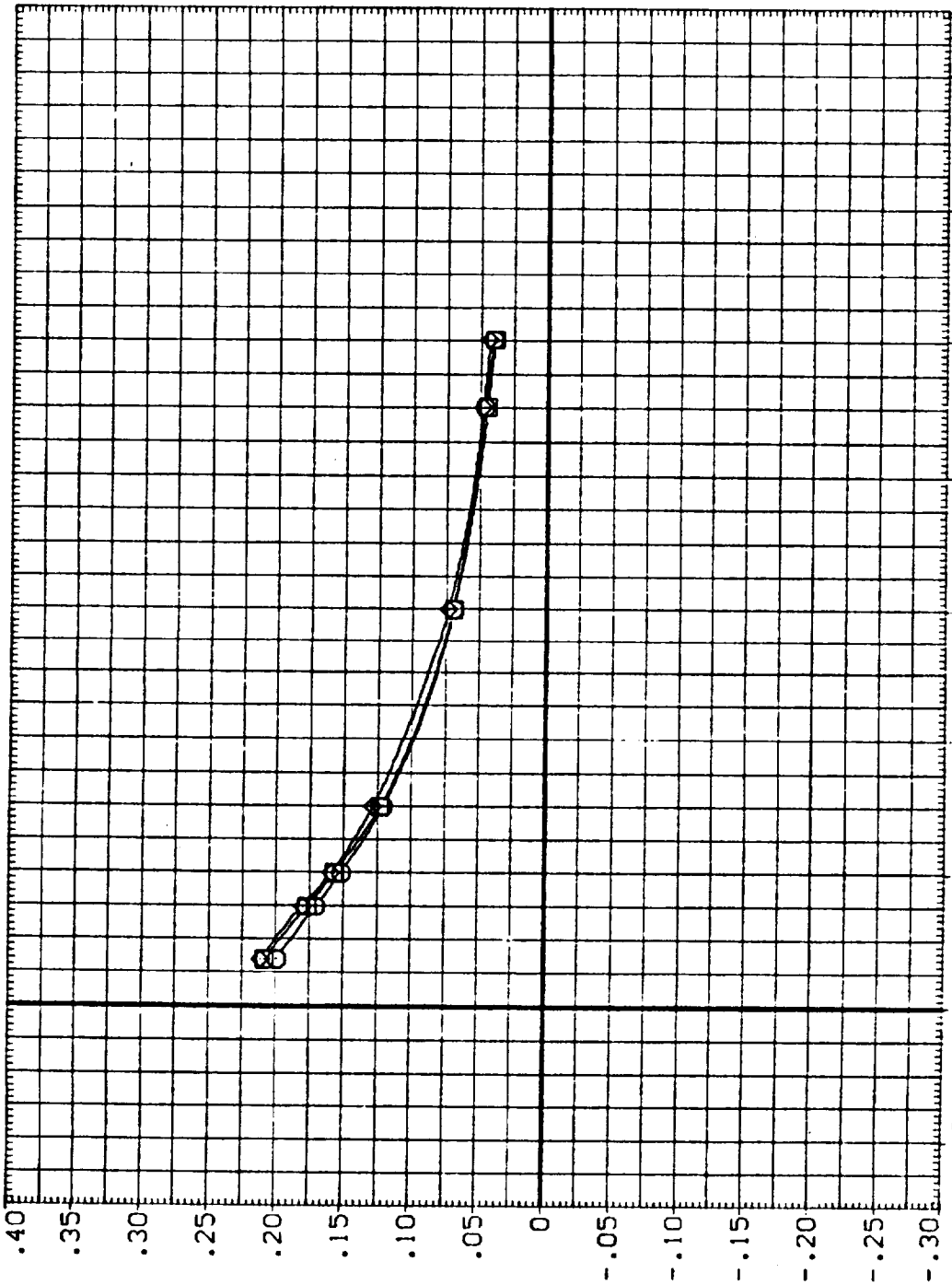
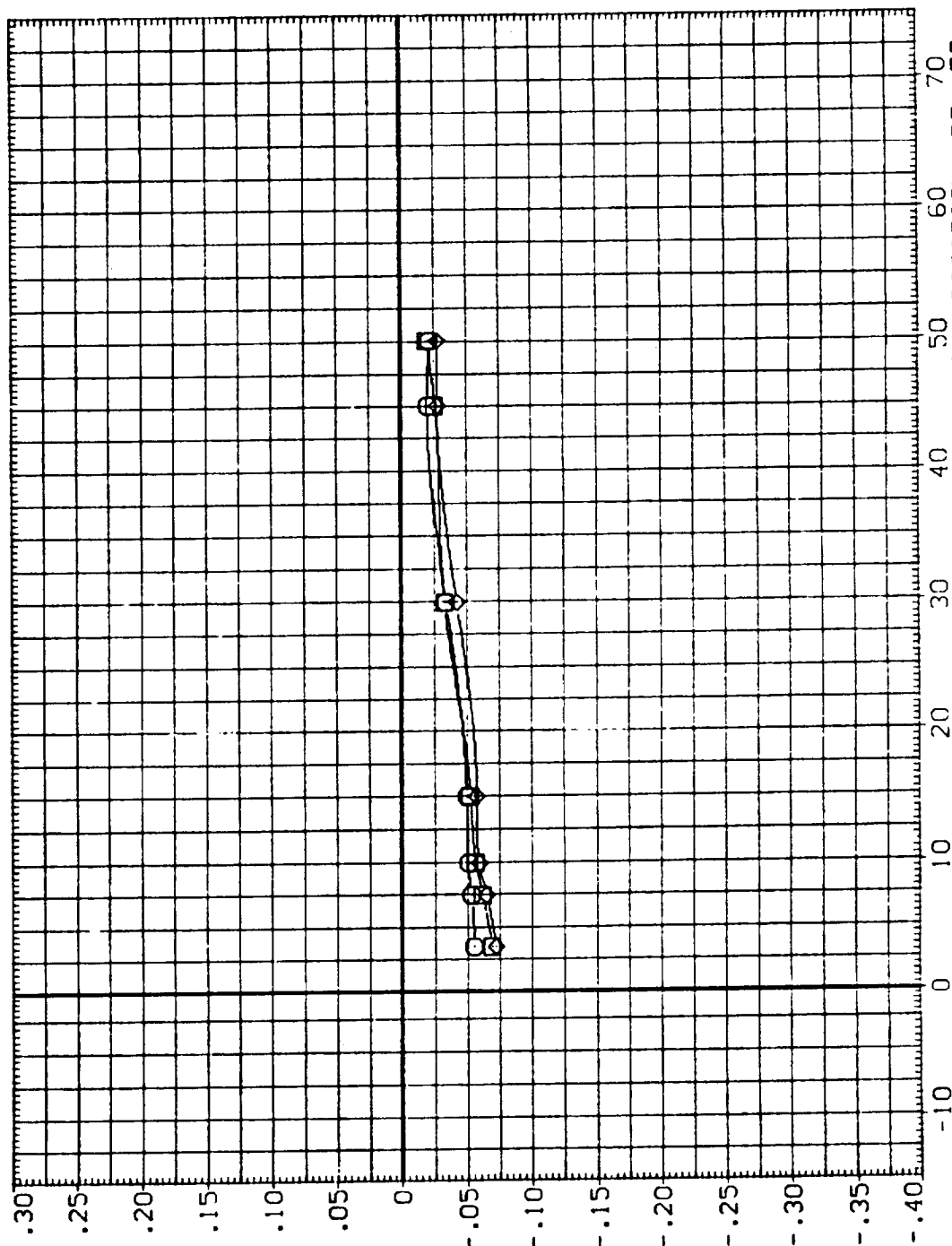


FIG. 18 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
(B)ALPHAC= 4.00  
PAGE 120

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX10)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	.000	5.000	8.000	.600	SREF 2690.0000 SQ.FT.
(4NHX15)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	10.000	5.000	8.000	.600	LREF 474.8100 IN.
(4NHX17)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	20.000	5.000	8.000	.600	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

ORBITTER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 19 EFFECT OF ORBITER DX ON ORBITTER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NHX10) ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)  
 (4NHX15) ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)  
 (4NHX17) ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)

DX ELEVON IORB MACH REFERENCE INFORMATION  
 .000 5.000 8.000 .600 SREF 2690.0000 SQ.FT.  
 10.000 5.000 8.000 .600 LREF 474.8100 IN.  
 20.000 5.000 8.000 .600 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

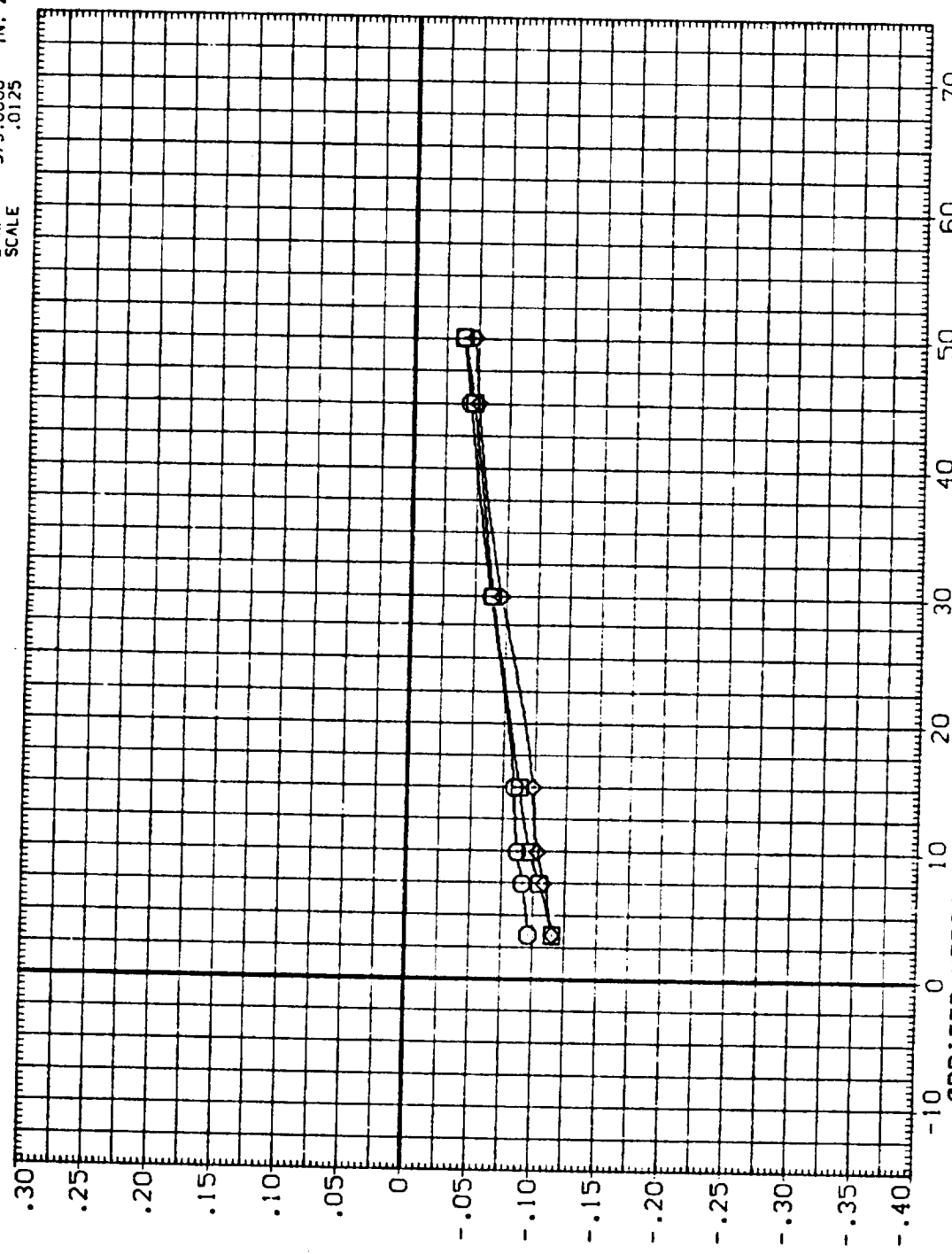


FIG. 19 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
 (B) ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX10)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	.000	5.000	8.000	.600	SREF 2690.0000 SQ.FT.
(4NHX15)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	10.000	5.000	8.000	.600	LREF 474.8100 IN.
(4NHX17)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	20.000	5.000	8.000	.600	BREF 936.6800 IN.
						YMRP 1109.0000 IN. X0
						ZMRP 375.0000 IN. Y0
						SCALE .0125

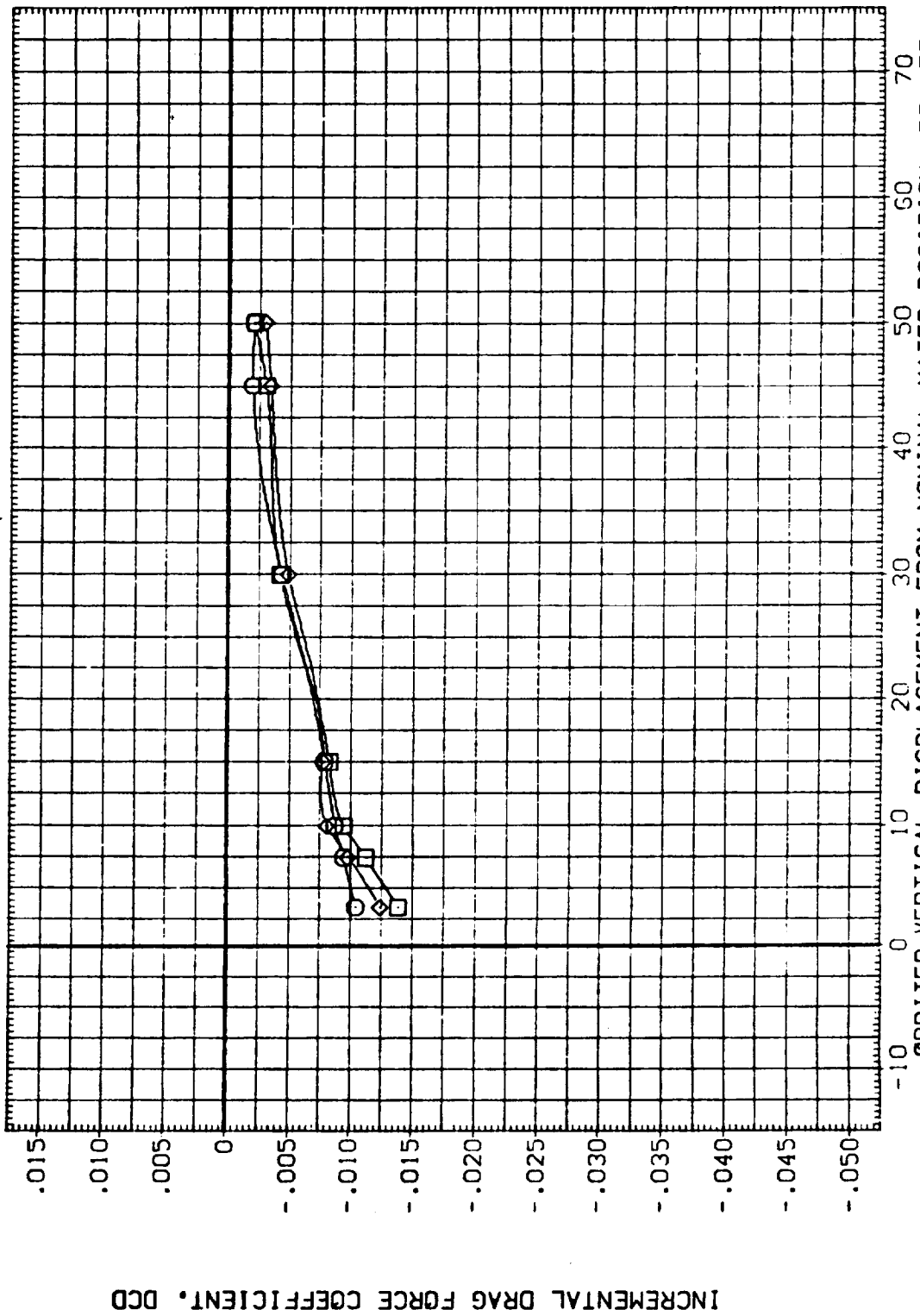


FIG. 19 EFFECT OF ORBITER DX ON ORBITER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=8.0 DEG)  
(A)ALPHAC= 2.00  
PAGE 123

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NHX10)  
(4NHX15)  
(4NHX17)

ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)

DX .000  
10.000  
20.000

ELEVON 5.000  
5.000  
5.000

IORB 8.000  
8.000  
8.000

MACH .600  
.600  
.600

REFERENCE INFORMATION  
SREF 2690.0000 SO.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

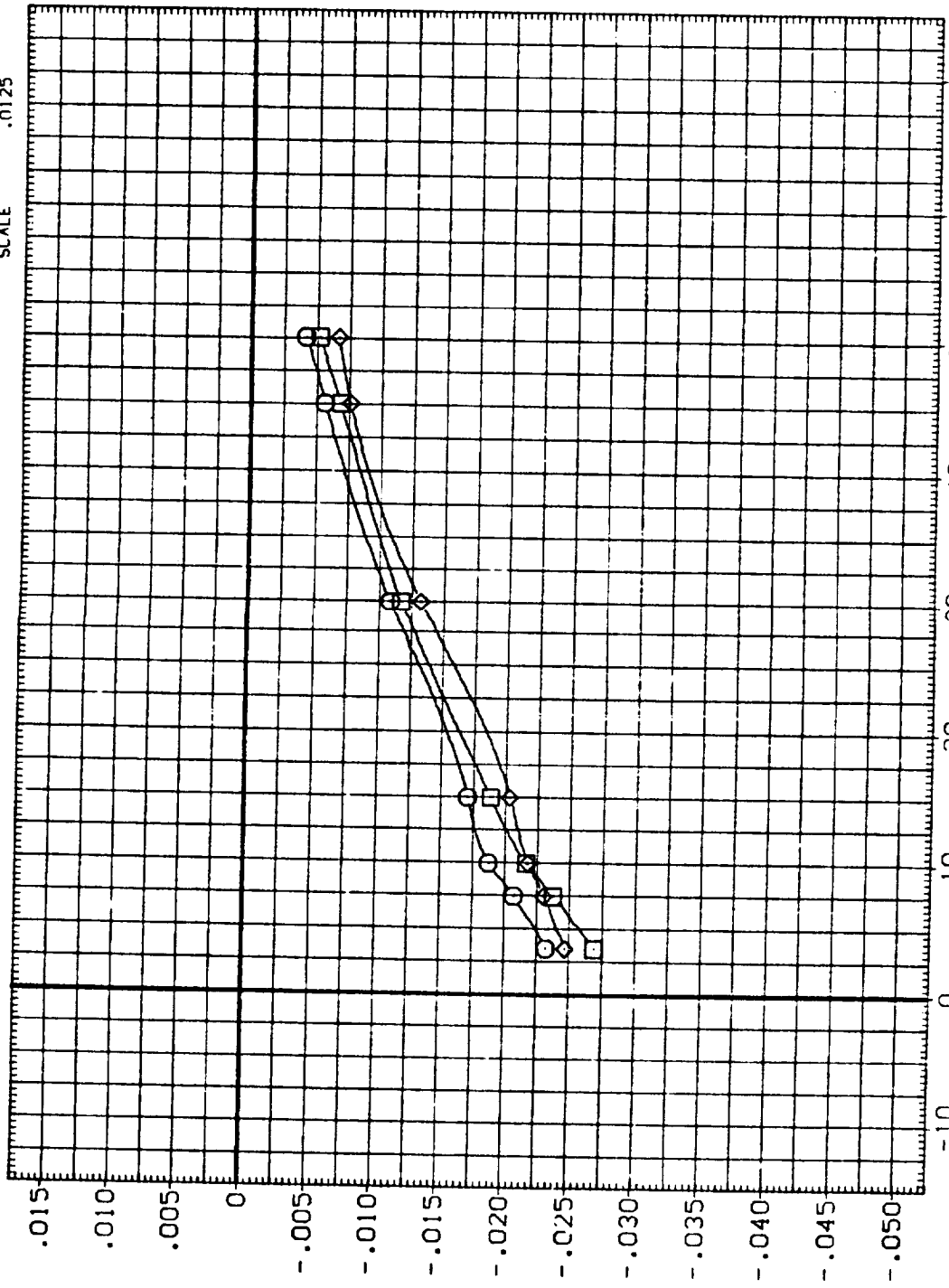


FIG. 19 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX10)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	.000	5.000	8.000	.600	SREF 2690.0000 SQ.FT.
(4NHX15)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	10.000	5.000	8.000	.600	LREF 474.8100 IN.
(4NHX17)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	20.000	5.000	8.000	.600	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

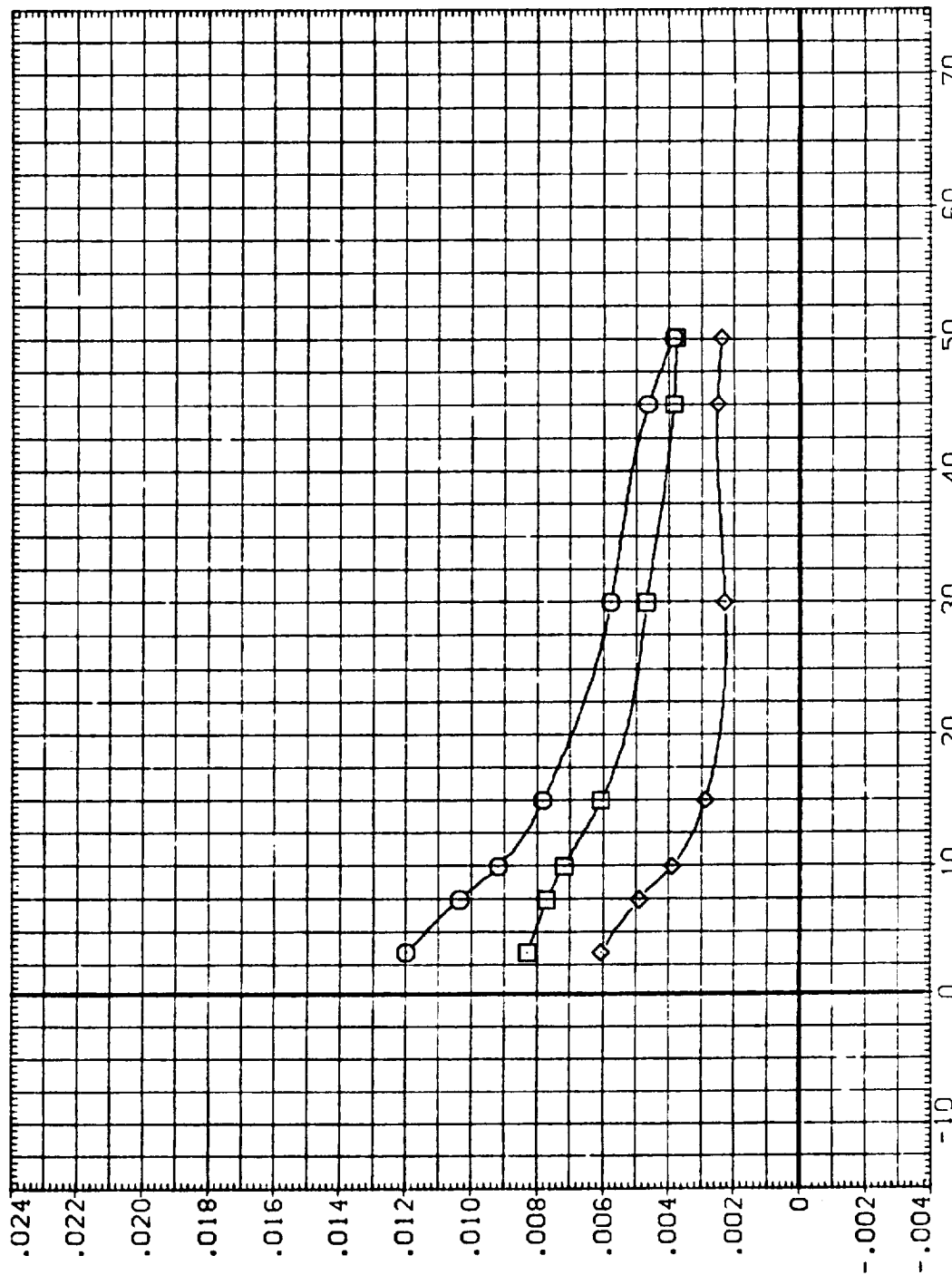


FIG. 19 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

DATA SET SYMBOL  
(4NHX10)  
(4NHX15)  
(4NHX17)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)



DX  
-000  
10.000  
20.000

ELEVON  
5.000  
5.000  
5.000

MACH  
0.600  
0.600  
0.600

REFERENCE INFORMATION  
SREF 2690.0000 50. FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP 0.0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

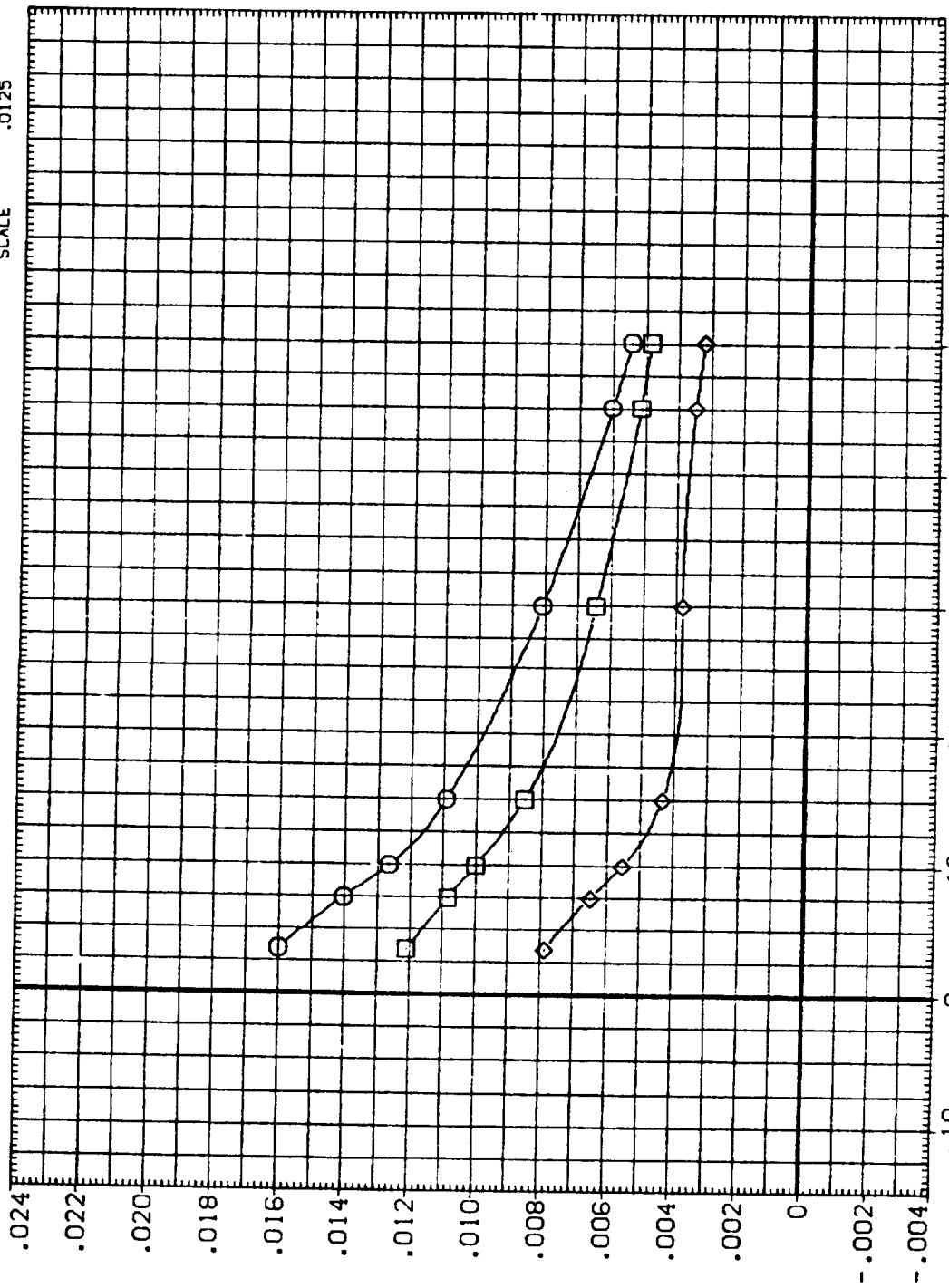


FIG. 19 EFFECT OF ORBITER DX ON ORBITER(STAB= 5.0 DEG., ORB 1/C OFF, IORB=8.0 DEG)  
(B)ALPHAC= 4.00  
PAGE 126

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM



DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (UNHY13)    ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)  
 (UNHY18)    ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

DY    ELEVON    IORB    MACH  
 .000    5.000    6.000    .600  
 10.000    5.000    6.000    .600

REFERENCE INFORMATION  
 SREF    5500.0000    50. FT.  
 LREF    327.7800    IN.  
 BREF    2348.0400    IN.  
 XMRP    1339.9000    IN.  
 YMRP    .0000    IN.  
 ZMRP    190.7500    IN.  
 SCALE    .0125

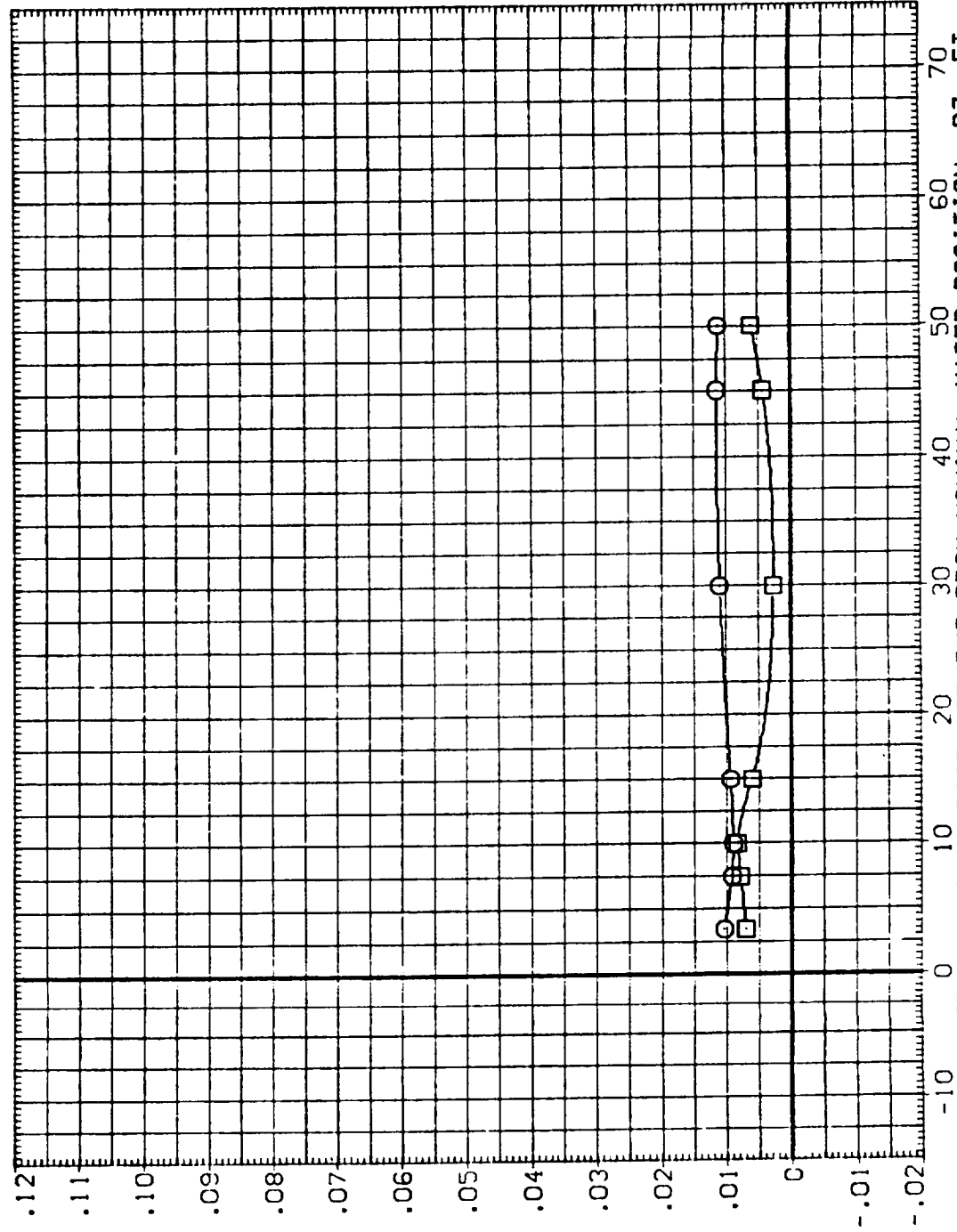


FIG. 20 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

DATA SET SYMBOL  
(UNHY13)  
(UNHY18)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

DY  
ELEVON  
DY  
ELEVON

MACH  
MACH

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

SIDE FORCE COEFFICIENT, CY

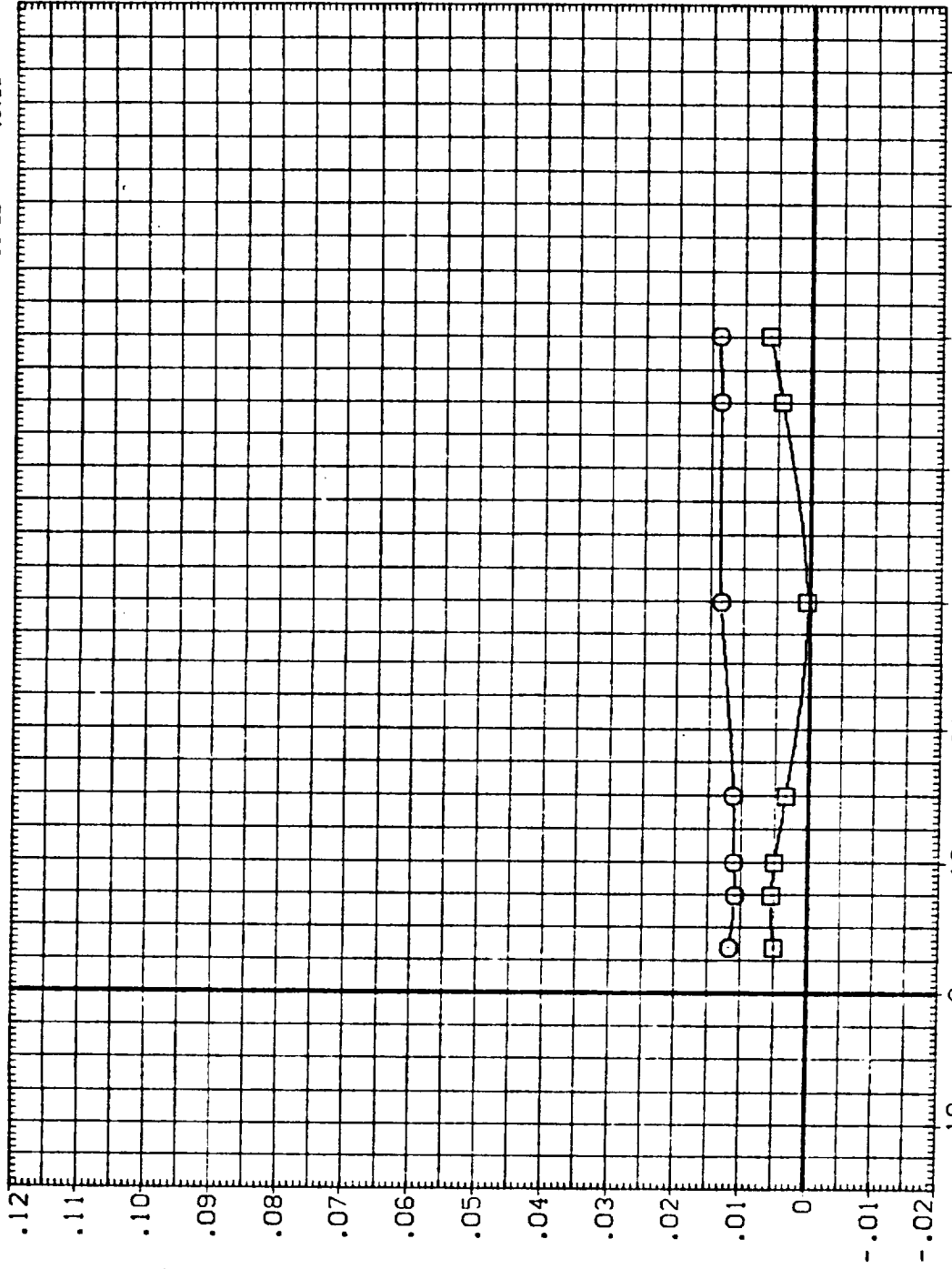


FIG. 20 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)  
(B)ALPHAC= 4.00  
PAGE 128

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(UNHY13)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 50. FT.
(UNHY18)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

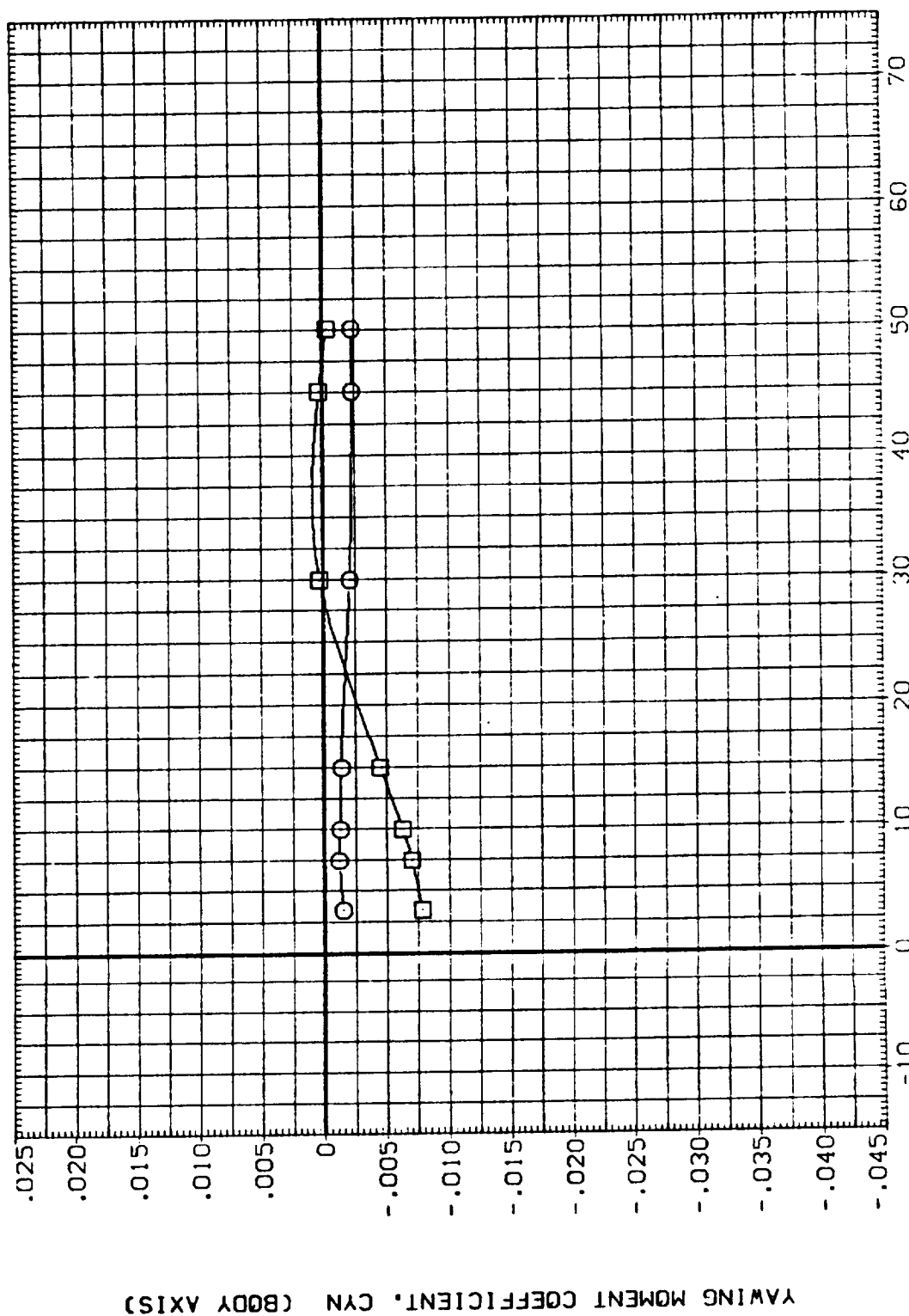


FIG. 20 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)  
 (A) ALPHAC= 2.00  
 PAGE 129

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN.
XMRP	1339.5000 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0125

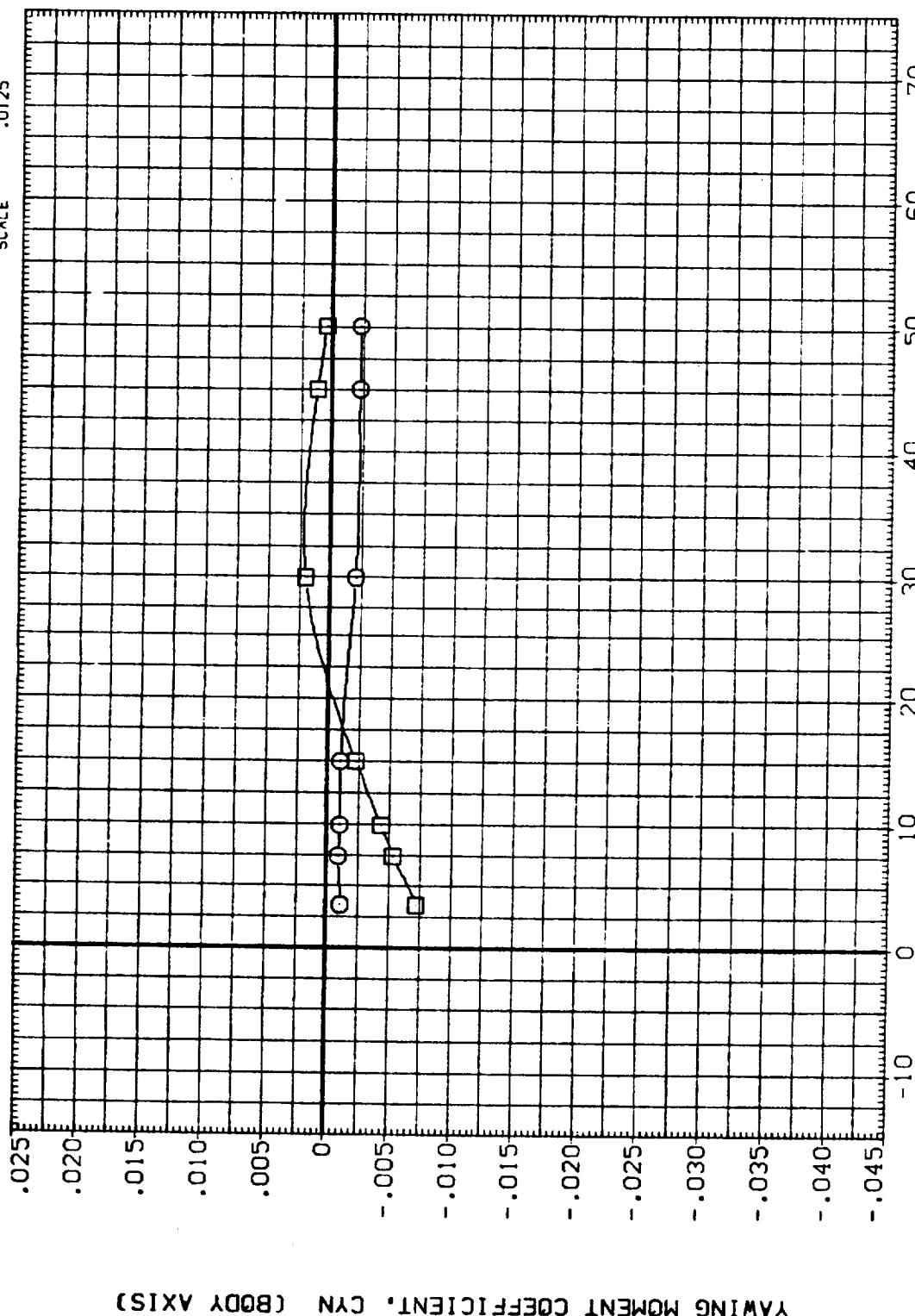


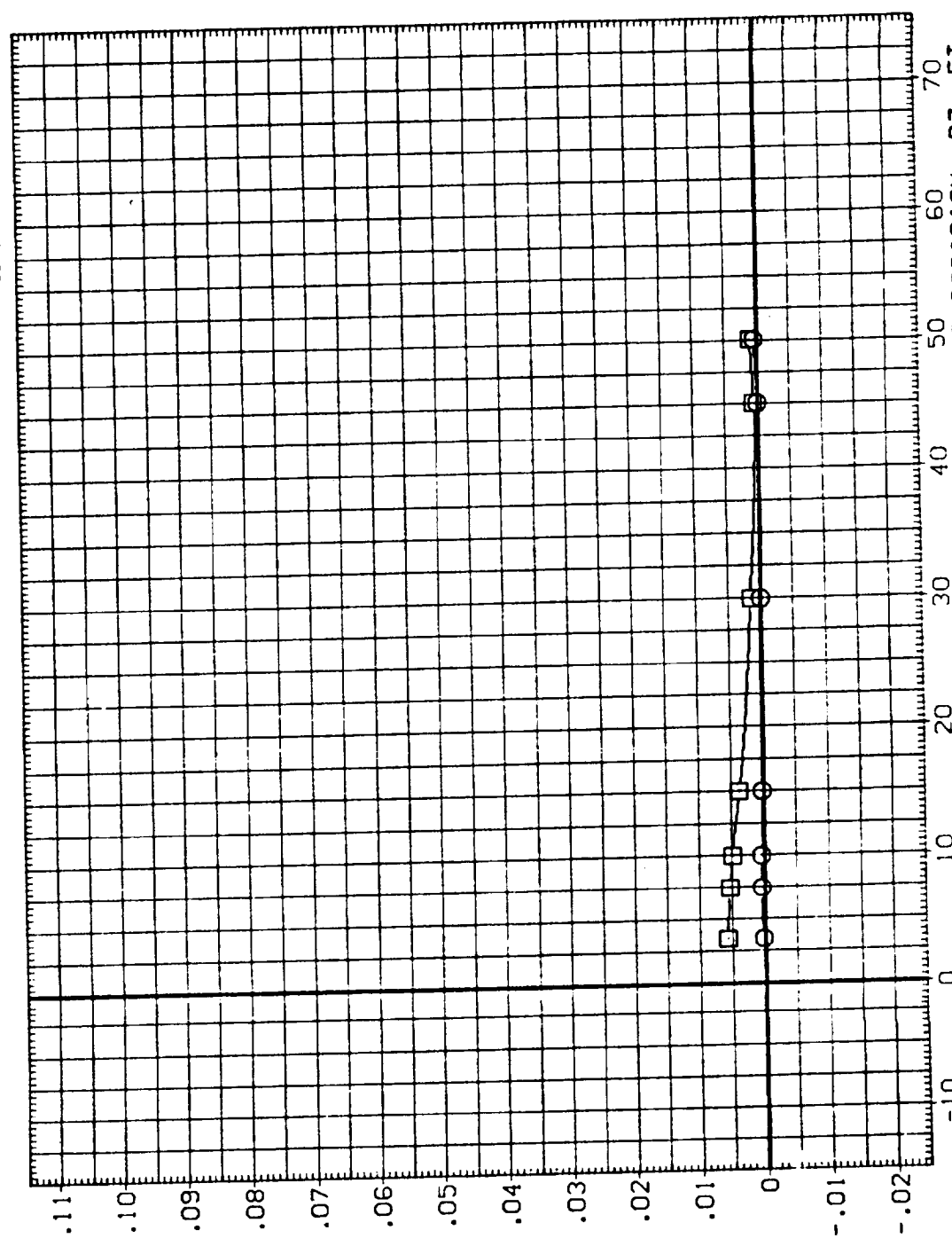
FIG. 20 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=6.0 DEG)  
[B]ALPHAC= 4.00

DATA SET SYMBOL (UNHY13) (UNHY18)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)  
 ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

REFERENCE INFORMATION  
 SREF 5500.0000 50.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XREF 1339.9000 IN.  
 YMRP .0000 IN.  
 ZMRP 190.7500 IN.  
 SCALE .0125

ORBITER DY .000 10.000  
 ELEVON 5.000 5.000  
 IORB 6.000 6.000  
 MACH .600 .600



ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 20 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=6.0 DEG)

DATA SET SYMBOL    CONFIGURATION DESCRIPTION    DY    ELEVON    IORB    MACH    REFERENCE INFORMATION

(UNHY13)	ARC 14-120(CA23B)	747/1 AT1	Q2S1 (CARRIER DATA)	.000	5.000	6.000	SREF	5500.0000	50.FT.
(UNHY18)	ARC 14-120(CA23B)	747/1 AT1	Q2S1 (CARRIER DATA)	10.000	5.000	6.000	LREF	327.7800	IN.
							BREF	2348.0400	IN.
							XMRP	1339.8000	IN.
							YMRP	.0000	IN.
							ZMRP	190.7500	IN.
							SCALE	.0125	IN.

ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)

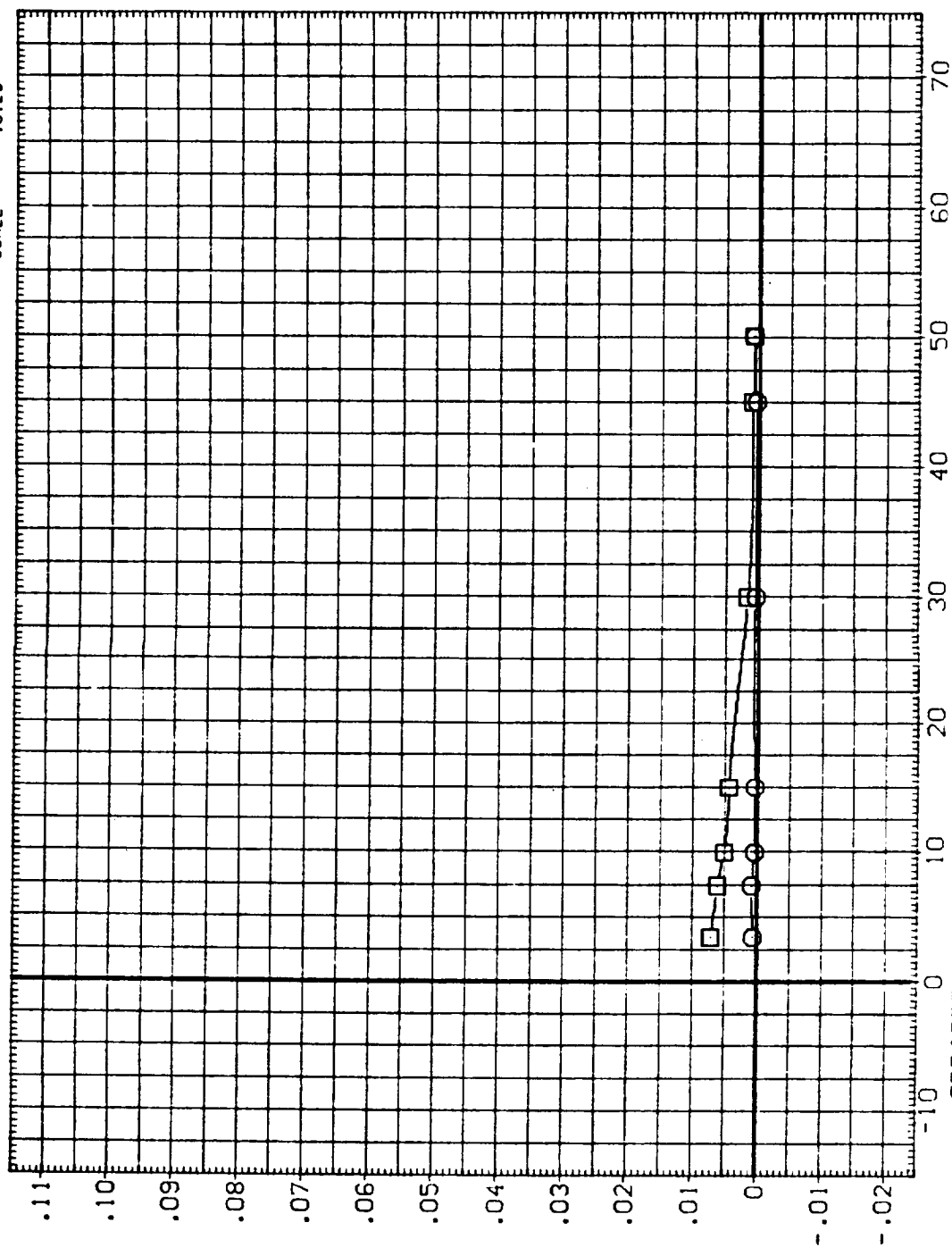


FIG. 20 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., IORB T/C OFF, IORB=6.0 DEG)  
 (B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHY13)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNHY18)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.5000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

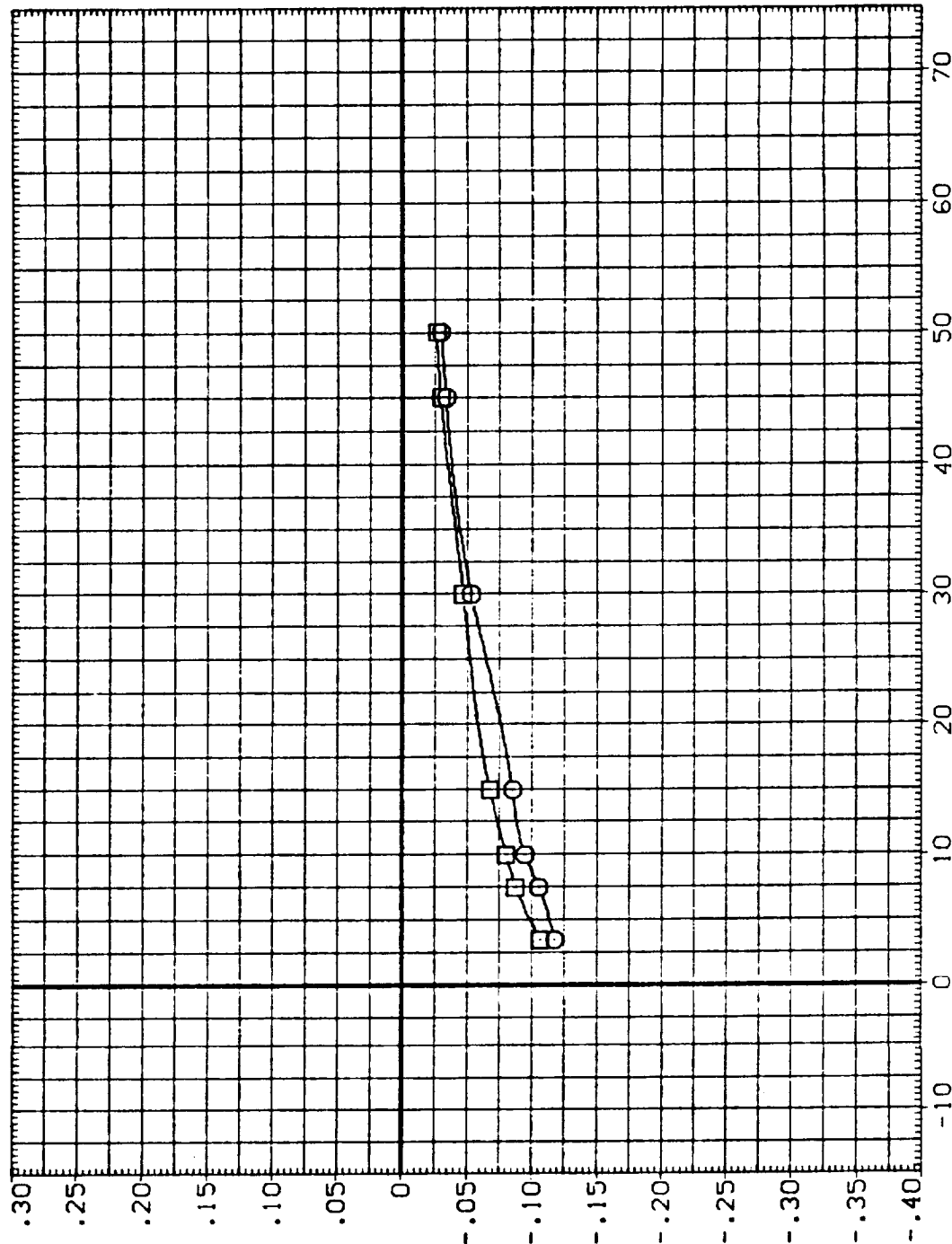


FIG. 20 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., IORB T/C OFF, IORB=6.0 DEG)  
(A) ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNHY13) ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)  
 (PNHY18) ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

DY .000  
 10.000

ELEVON 5.000  
 5.000

IORB 6.000  
 6.000

MACH .600  
 .600

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP 1000.0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

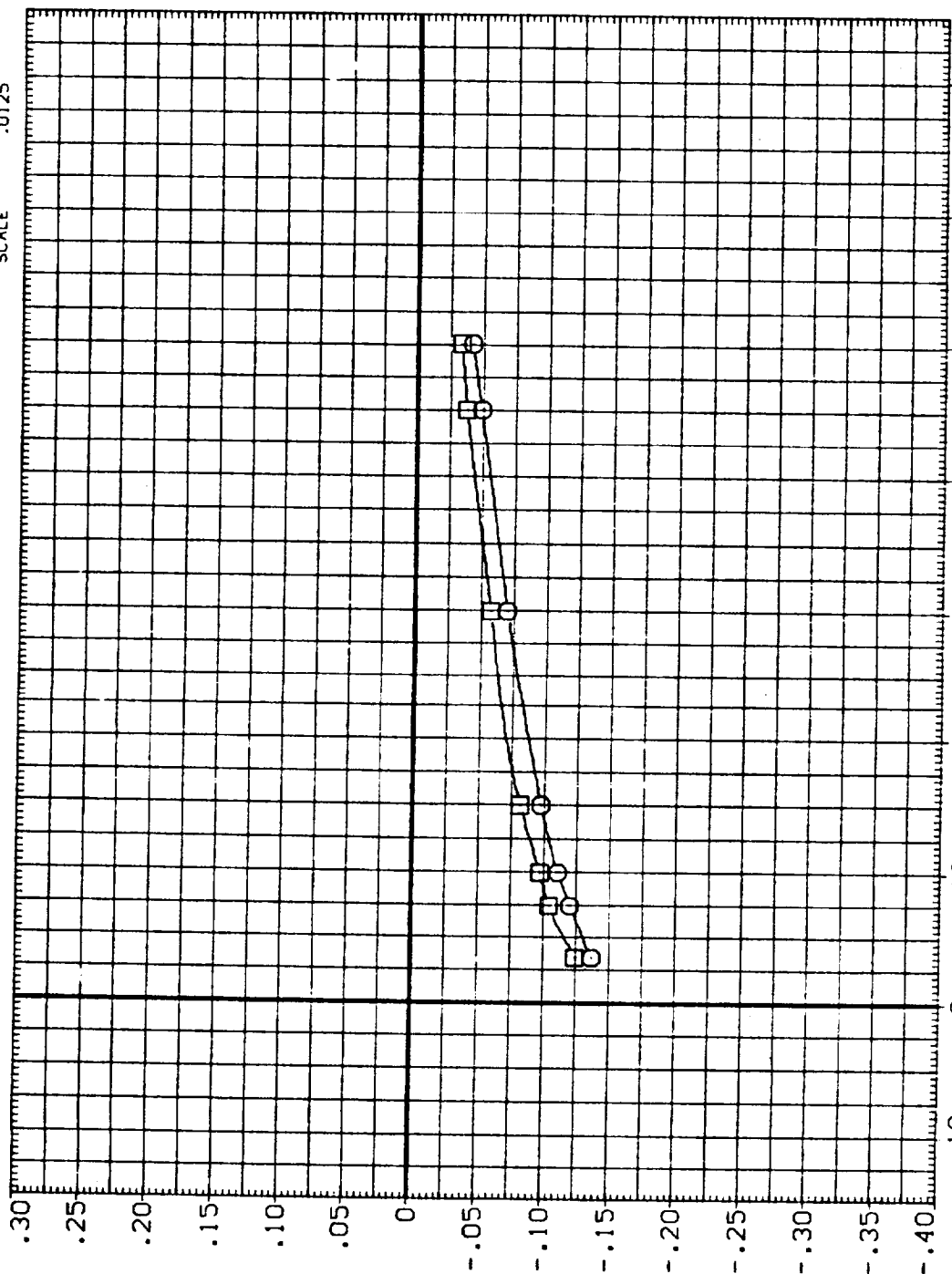


FIG. 20 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)  
 (B)ALPHAC= 4.00



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNHY13) 8 ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)  
 (PNHY18) ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)

DY .000  
 ELEVON 5.000  
 IORB 6.000  
 MACH .600  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN ZC  
 SCALE .0125

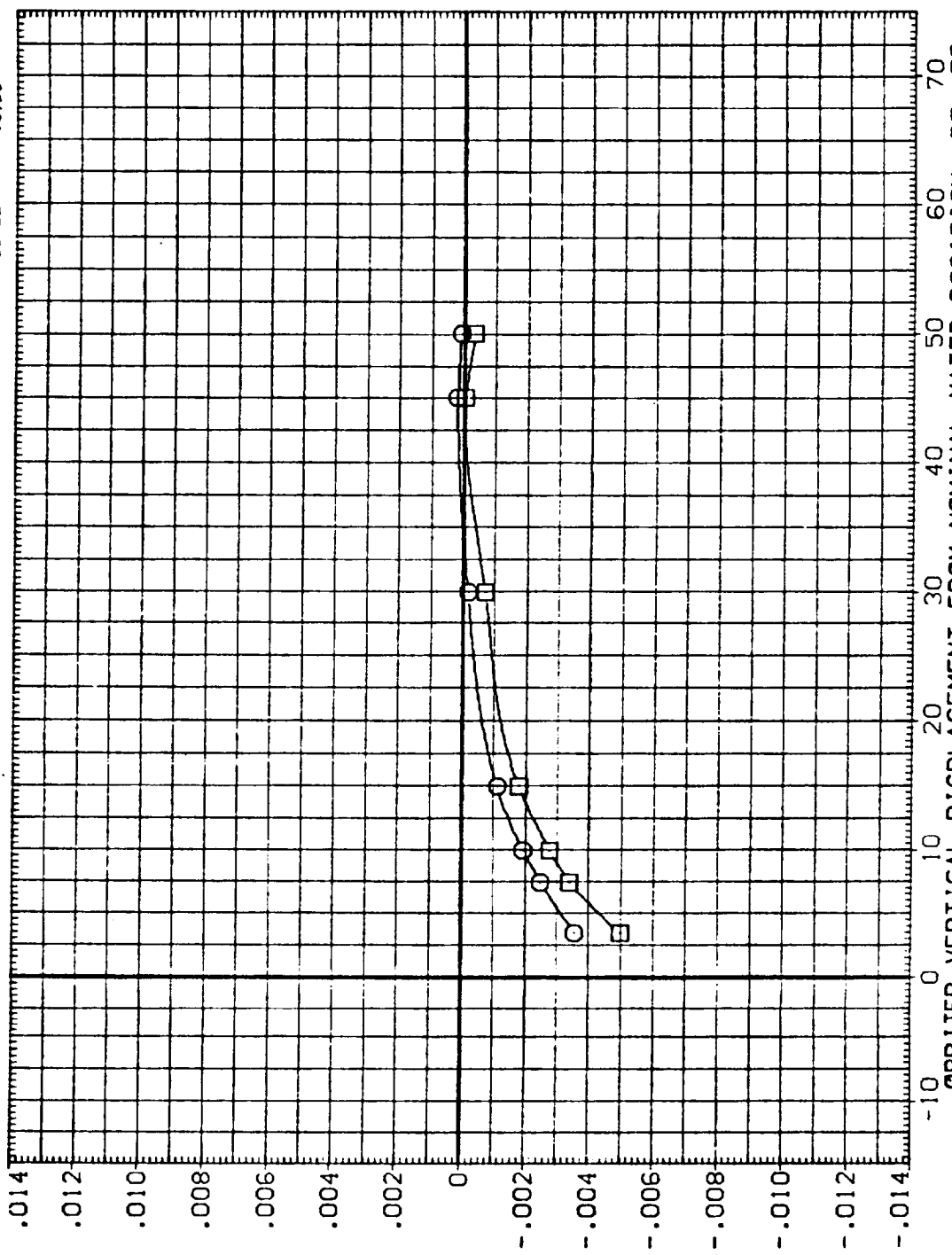


FIG. 20 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=6.0 DEG)  
 (A)ALPHAC= 2.00  
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHY13)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SO.FT.
(PNHY18)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN. XC
						XMRP 1339.9000 IN. YC
						YMRP .0000 IN. ZC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

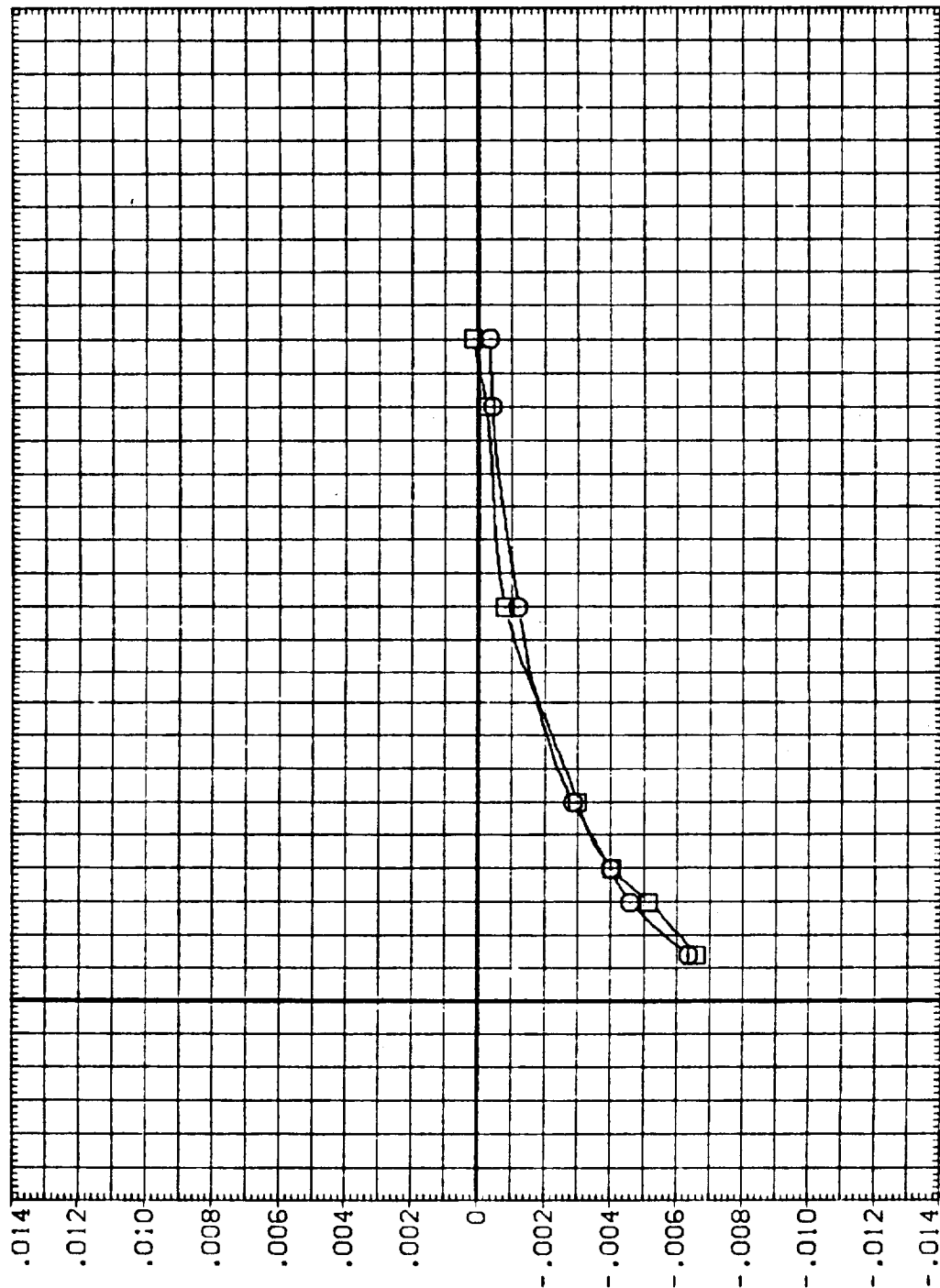
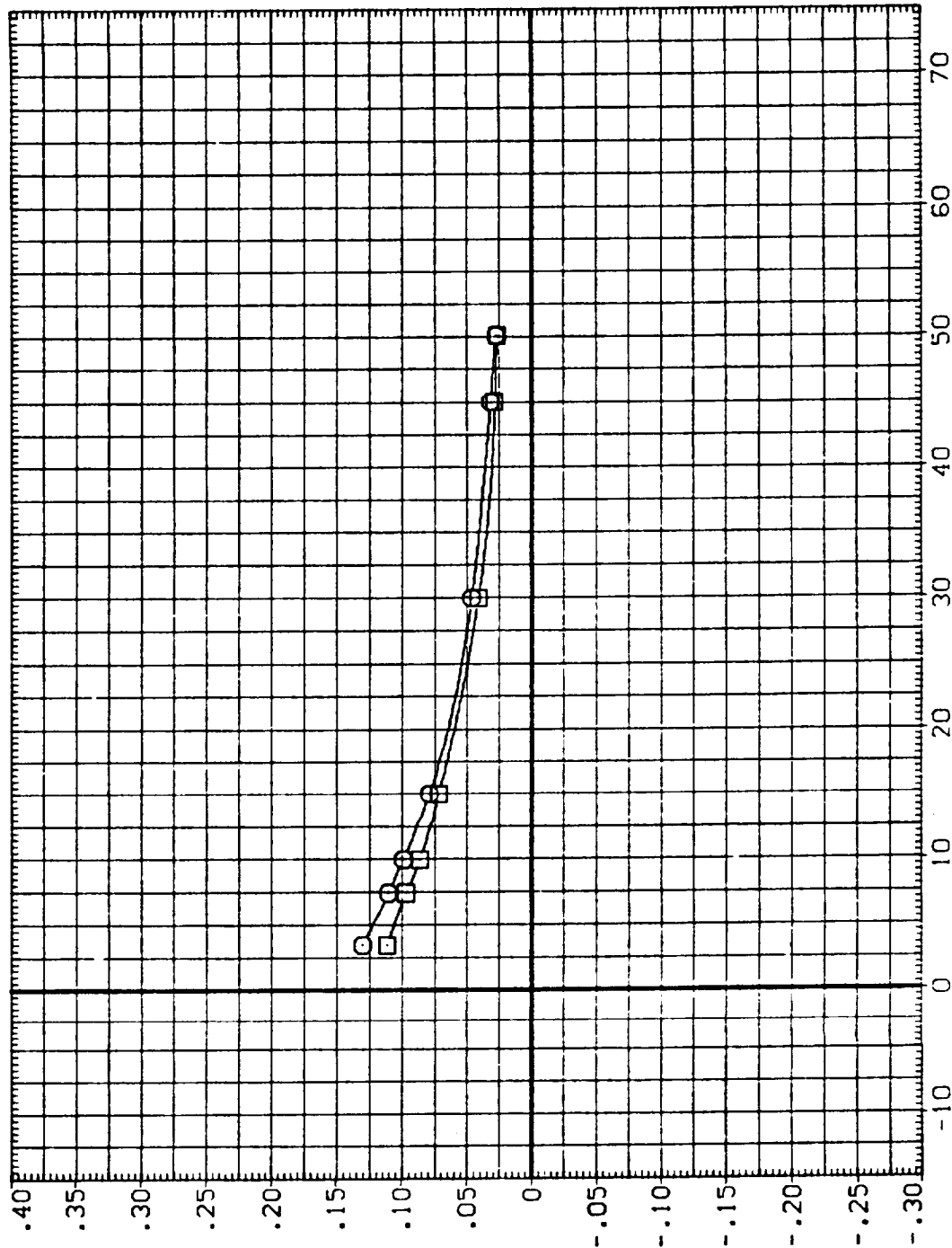




FIG. 20 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHY13)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNHY18)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						YMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						SCALE 190.7500 IN ZC



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 20 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,IOB=6.0 DEG)

DATA SET SYMBOL	
(PNHY13)	
(PNHY18)	

CONFIGURATION	DESCRIPTION
ARC 14-120(CA238)	747/1 AT
ARC 14-120(CA238)	747/1 AT

0251 (CARRIER DATA)  
0251 (CARRIER DATA)

0Y  
10,000  
000

ELEVON	IORB	MACH
5.000	6.000	.600
5.000	6.000	.600

0009.  
MACH

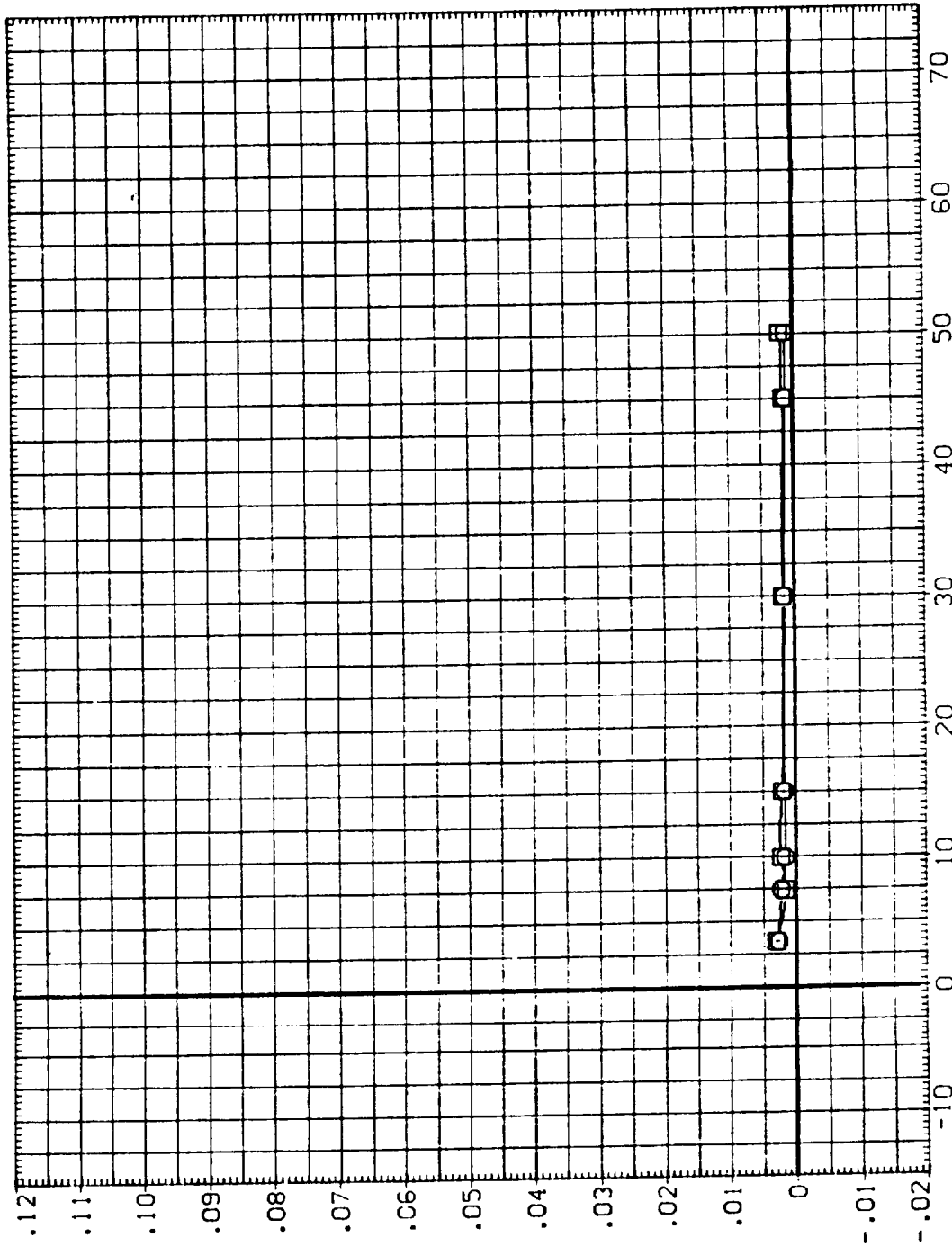
REFERENCE INFORMATION	
SREF	5500.0000
LREF	327.7800
BREF	2348.0400
XMRP	1339.9000
YMRP	.0000
ZMRP	190.7500
SCALE	.0125

Figure 1 is a line graph with a grid. The vertical axis is labeled 'SCALE' and has major tick marks from 0 to 0.40 in increments of 0.05. The horizontal axis has major tick marks from -0.30 to 0.0125. Two data series are plotted: one with open circle markers and one with open square markers. Both series show a decreasing trend as the x-value decreases. The circle series is consistently slightly higher than the square series.

x	Circle Series (f)	Square Series (f)
0.0125	0.12	0.11
0.005	0.10	0.09
0.0025	0.08	0.07
0.00125	0.06	0.05
0.000625	0.04	0.03
0.0003125	0.02	0.01
0.00015625	0.01	0.005
0.000078125	0.005	0.002
0.0000390625	0.002	0.001
0.00001953125	0.001	0.0005
0.000009765625	0.0005	0.0002
0.0000048828125	0.0002	0.0001
0.00000244140625	0.0001	0.00005
0.000001220703125	0.00005	0.00002
0.0000006103515625	0.00002	0.00001
0.00000030517578125	0.00001	0.000005
0.000000152587890625	0.000005	0.000002
0.0000000762939453125	0.000002	0.000001
0.00000003814697265625	0.000001	0.0000005
0.000000019073486328125	0.0000005	0.0000002
0.0000000095367431640625	0.0000002	0.0000001
0.00000000476837158203125	0.0000001	0.00000005
0.000000002384185791015625	0.00000005	0.00000002
0.0000000011920928955078125	0.00000002	0.00000001
0.00000000059604644775390625	0.00000001	0.000000005
0.000000000298023223876953125	0.000000005	0.000000002
0.0000000001490116119384765625	0.000000002	0.000000001
0.00000000007450580596923828125	0.000000001	0.0000000005
0.000000000037252902984619140625	0.0000000005	0.0000000002
0.0000000000186264514923095703125	0.0000000002	0.0000000001
0.00000000000931322574615478515625	0.0000000001	0.00000000005
0.000000000004656612873077392578125	0.00000000005	0.00000000002
0.0000000000023283064365386962890625	0.00000000002	0.00000000001
0.00000000000116415321826934814453125	0.00000000001	0.000000000005
0.000000000000582076609134674072265625	0.000000000005	0.000000000002
0.0000000000002910383045673370361328125	0.000000000002	0.000000000001
0.00000000000014551915228366851806640625	0.000000000001	0.0000000000005
0.000000000000072759576141834259033203125	0.0000000000005	0.0000000000002
0.0000000000000363797880709171295166015625	0.0000000000002	0.0000000000001
0.00000000000001818989403545856475830078125	0.0000000000001	0.00000000000005
0.000000000000009094947017729282379150390625	0.00000000000005	0.00000000000002
0.0000000000000045474735088646141895751953125	0.00000000000002	0.00000000000001
0.00000000000000227373675443230709478759765625	0.00000000000001	0.000000000000005
0.000000000000001136868377216153547393798828125	0.000000000000005	0.000000000000002
0.0000000000000005684341886080767736968994140625	0.000000000000002	0.000000000000001
0.00000000000000028421709430403838684844970703125	0.000000000000001	0.0000000000000005
0.000000000000000142108547152019193424224853515625	0.0000000000000005	0.0000000000000002
0.0000000000000000710542735760095967121124267578125	0.0000000000000002	0.0000000000000001
0.00000000000000003552713678800479835605621337890625	0.0000000000000001	0.00000000000000005
0.000000000000000017763568394002399178028106689453125	0.00000000000000005	0.00000000000000002
0.0000000000000000088817841970011995890140533447265625		

FIG. 20 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF, IORB=6.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNH13)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(VNH18)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



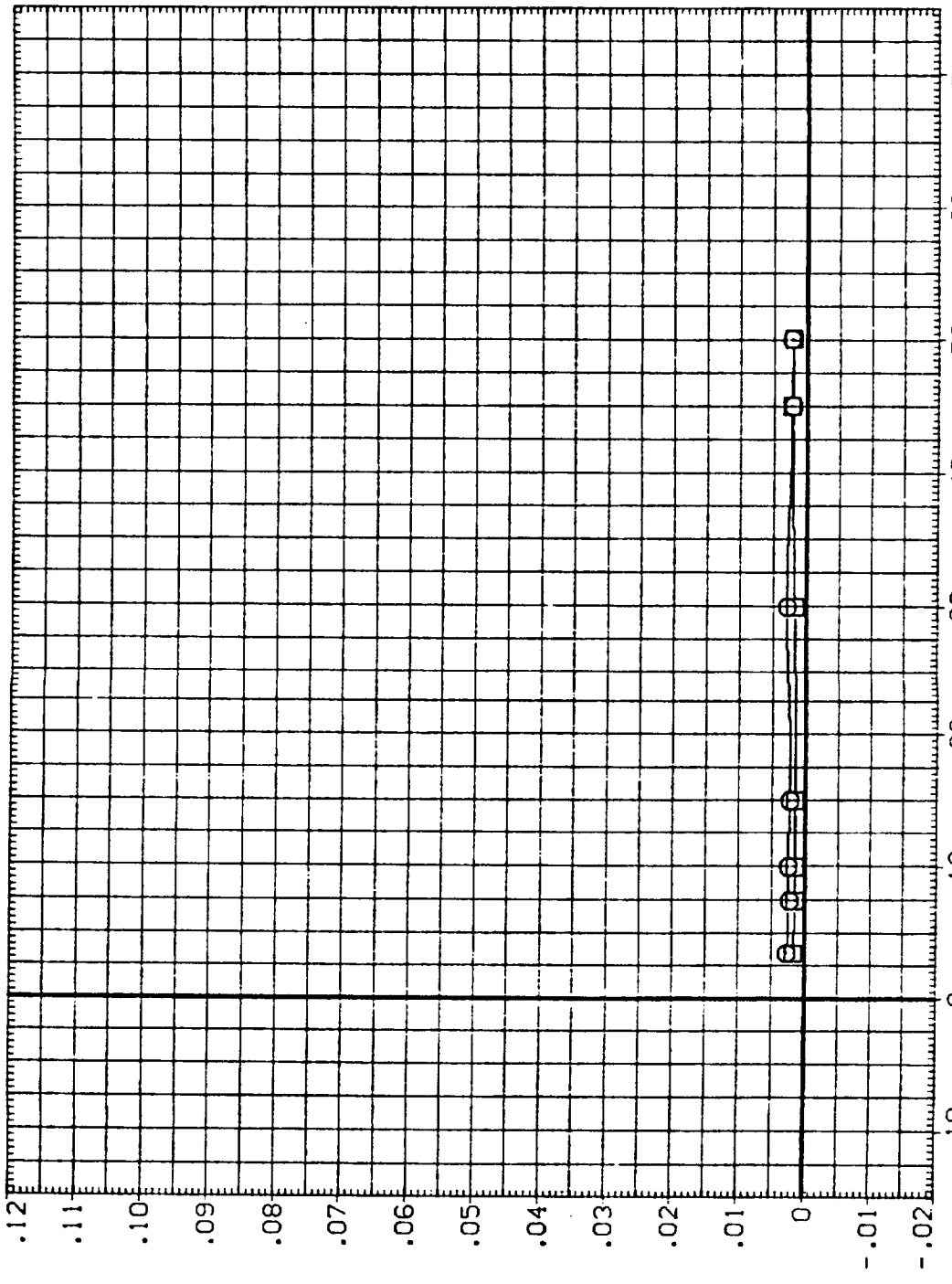
ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION. DZ. FT.

FIG. 21 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (VNH13) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
 (VNH18) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

REFERENCE INFORMATION  
 SREF 2690.0000 SQ. FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XHRP 1109.0000 IN. X0  
 YHRP .0000 IN. Y0  
 ZHRP 375.0000 IN. Z0  
 SCALE .0125

MACH .600  
 ELEVON 5.000 5.000  
 DY 10.000  
 ORB 6.000 6.000



SIDE FORCE COEFFICIENT, CY

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 21 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=6.0 DEG)  
 (B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNH13)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(VNH18)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

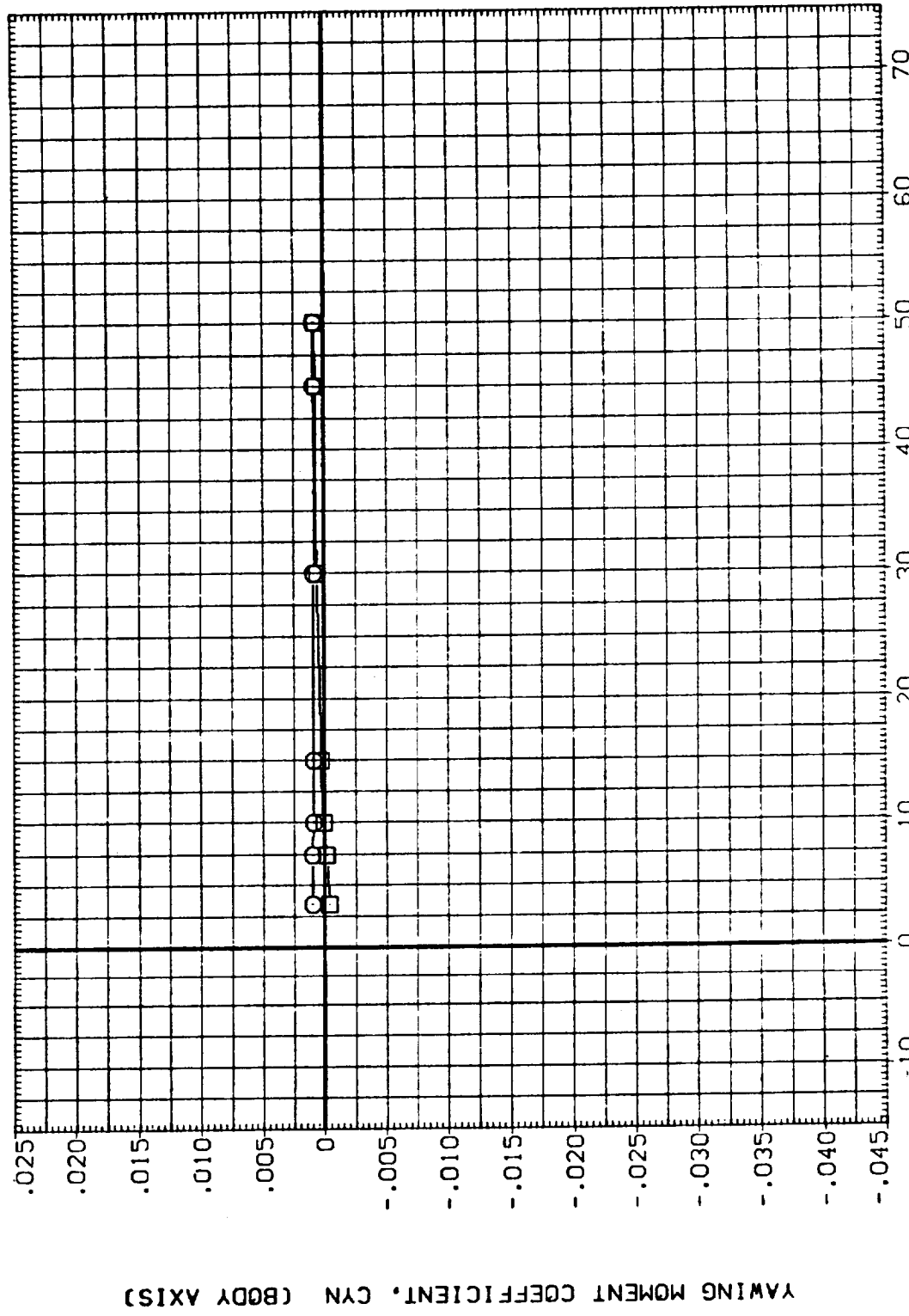


FIG. 21 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)  
 (A) ALPHA= 2.00

REFERENCE INFORMATION	
SREF	2690.0000 SO.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN. X0
YMRP	.0000 IN. Y0
ZMRP	375.0000 IN. Z0
	.0125 SCALE

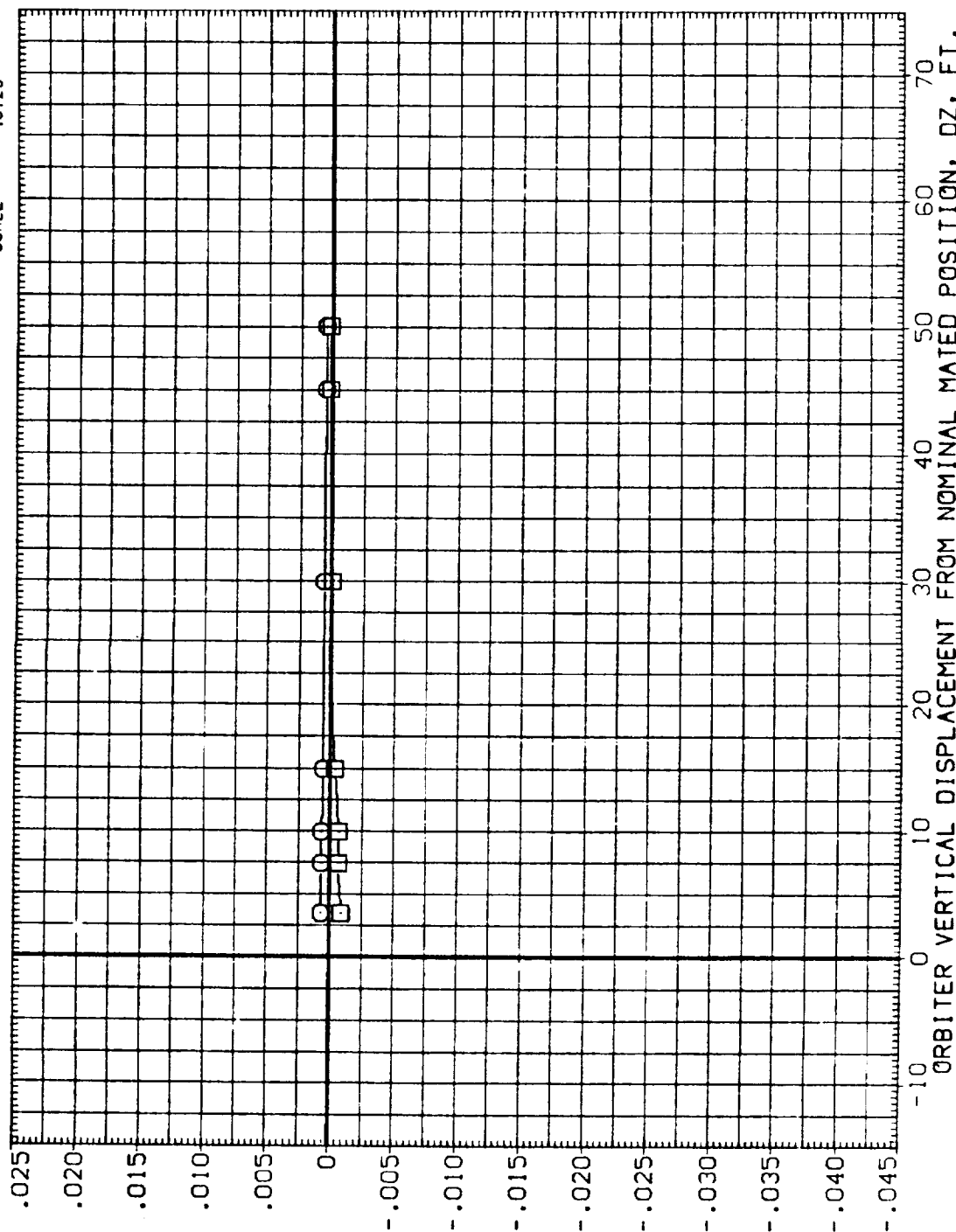


FIG. 21 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=6.0 DEG)  
 (B)ALPHAC= 4.00 PAGE 142



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNHV13)	ARC 14-120(CA23B)	747/1 AT1 02S1 (ORBITER DATA)	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(VNHV18)	ARC 14-120(CA23B)	747/1 AT1 02S1 (ORBITER DATA)	10.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

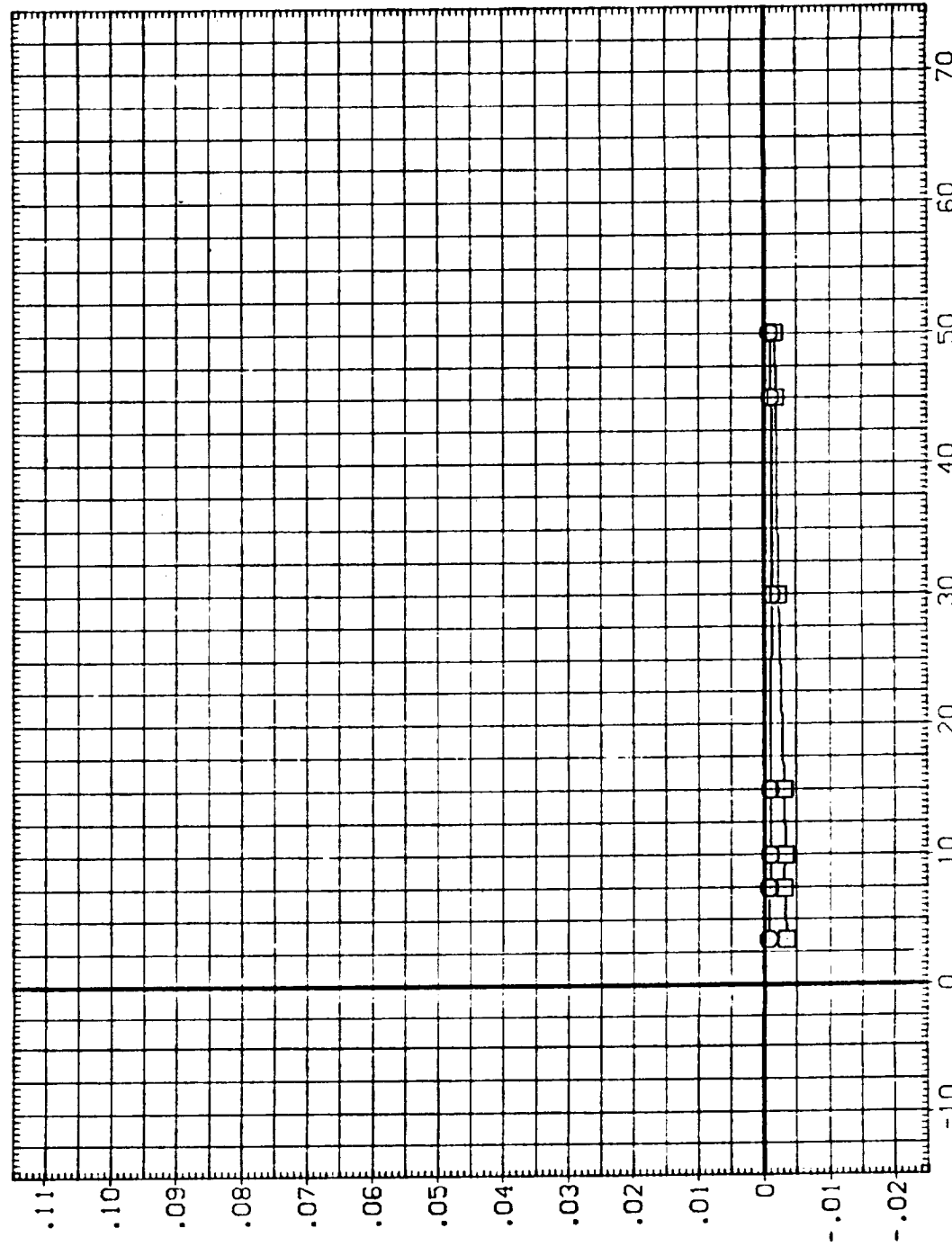


FIG. 21 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

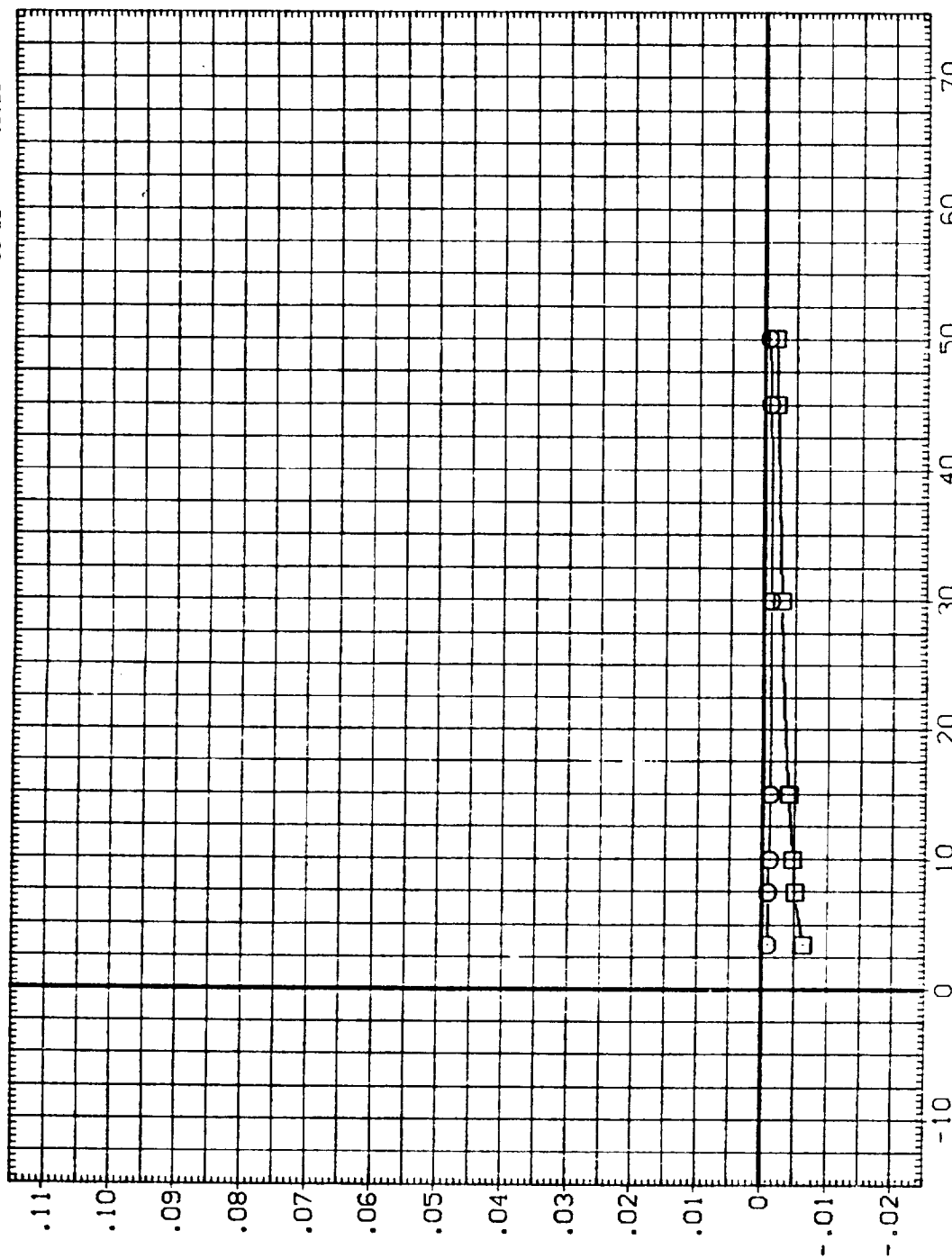
CA)ALPHAC= 2.00

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DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (VNHV13)    ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)  
 (VNHV18)    ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

DY    ELEVON    IORB    MACH  
 .000    5.000    6.000    .600  
 10.000    5.000    6.000    .600



ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DY, FT.

FIG. 21 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

(B)ALPHAC= 4.00

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT
LREF	474.8100 IN.
BREF	936.6800 IN.
XMXP	1109.0000 IN.
YMRP	.0000 IN.
ZMRP	375.0000 IN.
SCALE	.0125

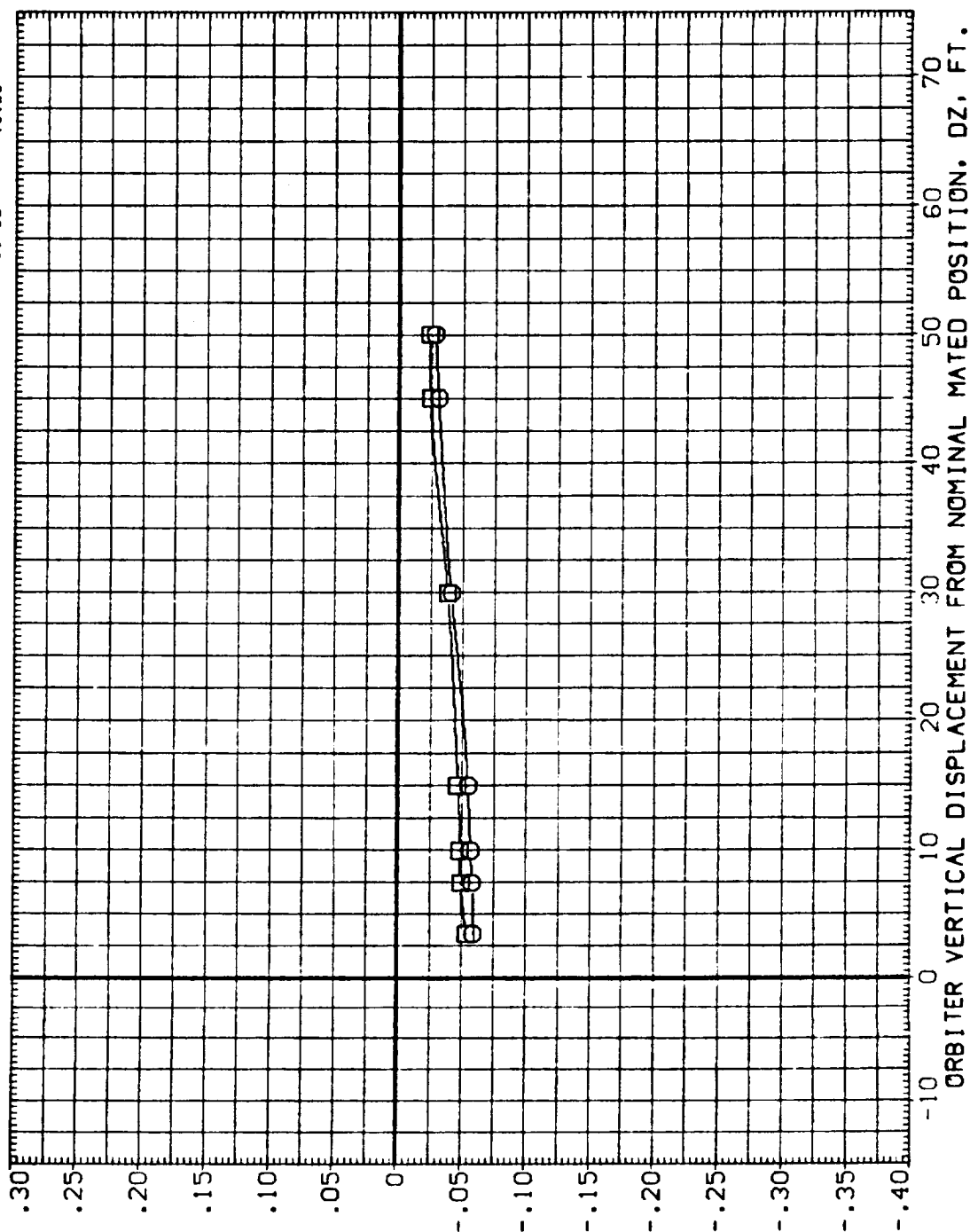


FIG. 21 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=6.0 DEG)

(A)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NHV13) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB1TER DATA)  
 (4NHV18) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORB1TER DATA)

DY ELEVON IORB MACH REFERENCE INFORMATION  
 .000 5.000 6.000 .600 SREF 2690.0000 SQ.FT.  
 10.000 5.000 6.000 .600 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

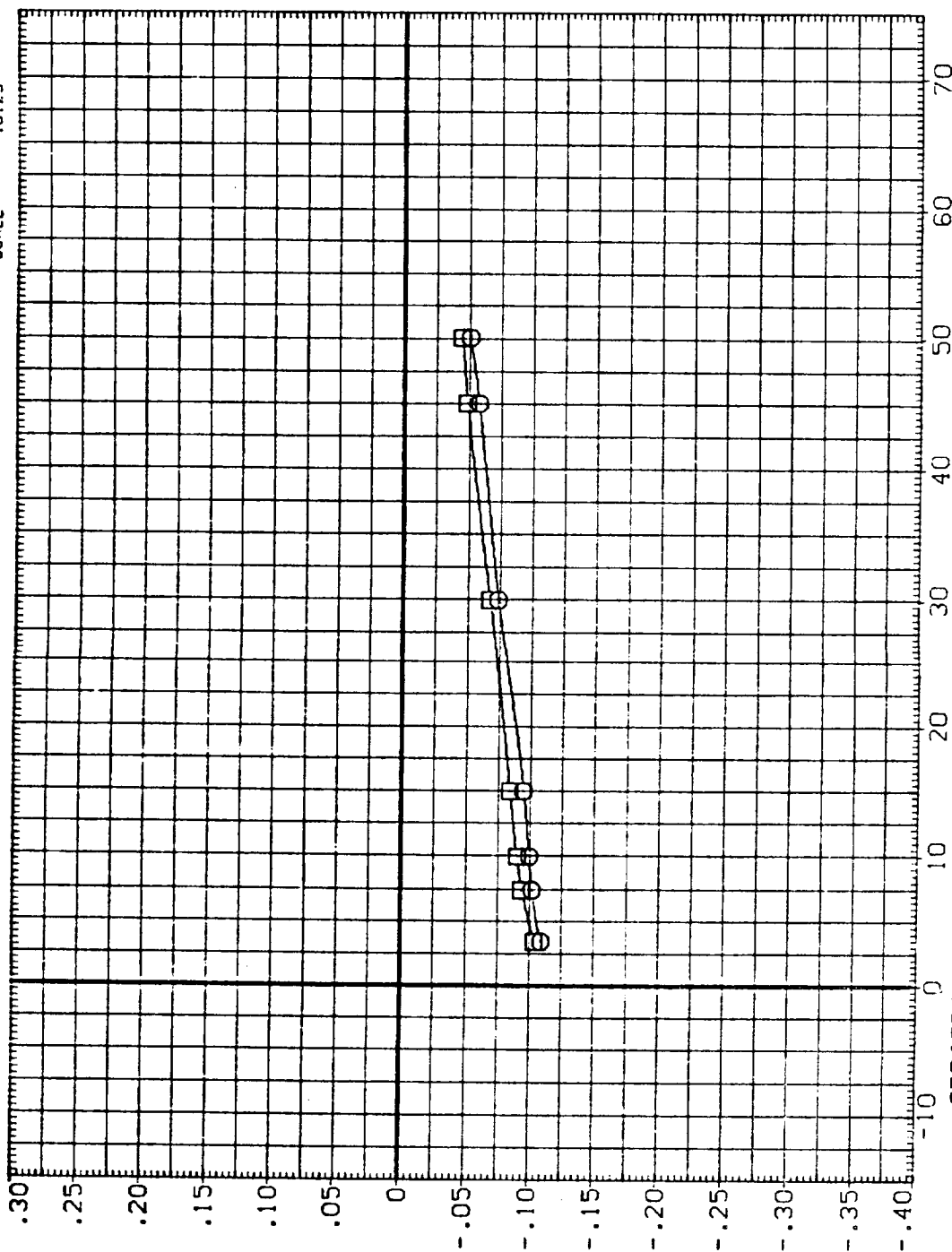


FIG. 21 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)  
 (B) ALPHAC= 4.00

DATA SET SYMBOL  
(4NHV13)  
(4NHV18)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

DY  
10.000

ELEVON  
5.000

IORB  
6.000

MACH  
.600

REFERENCE INFORMATION  
SREF 2690.0000 SQ. FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

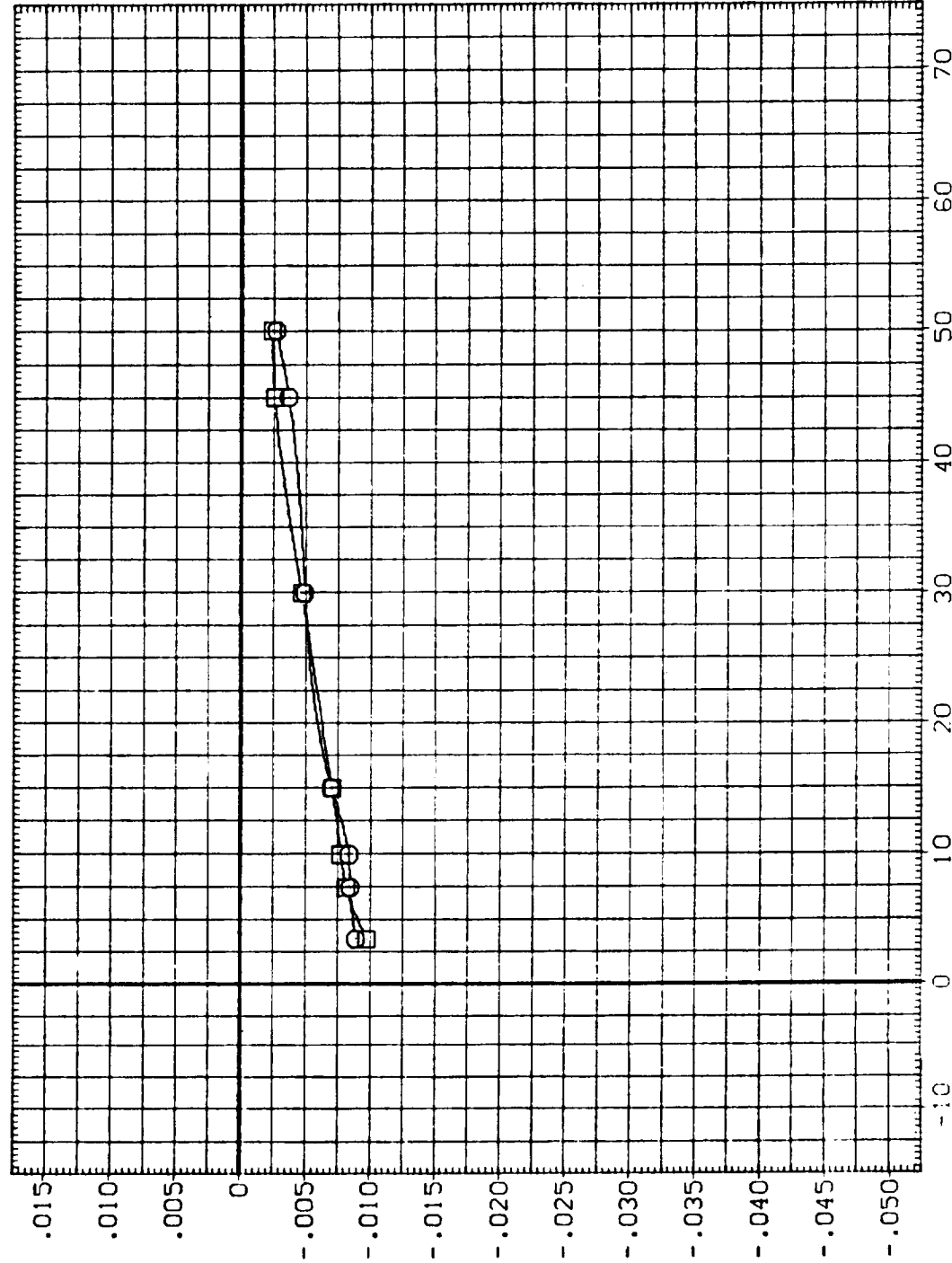


FIG. 21 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=6.0 DEG)  
(A)ALPHAC= 2.00

DATA SET SYMBOL  
(4NHV13)  
(4NHV18)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)

DY .000  
ELEVON 5.000  
MACH .600

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
YMRP 1109.0000 IN. X0  
ZMRP .0000 IN. Y0  
SCALE .0125

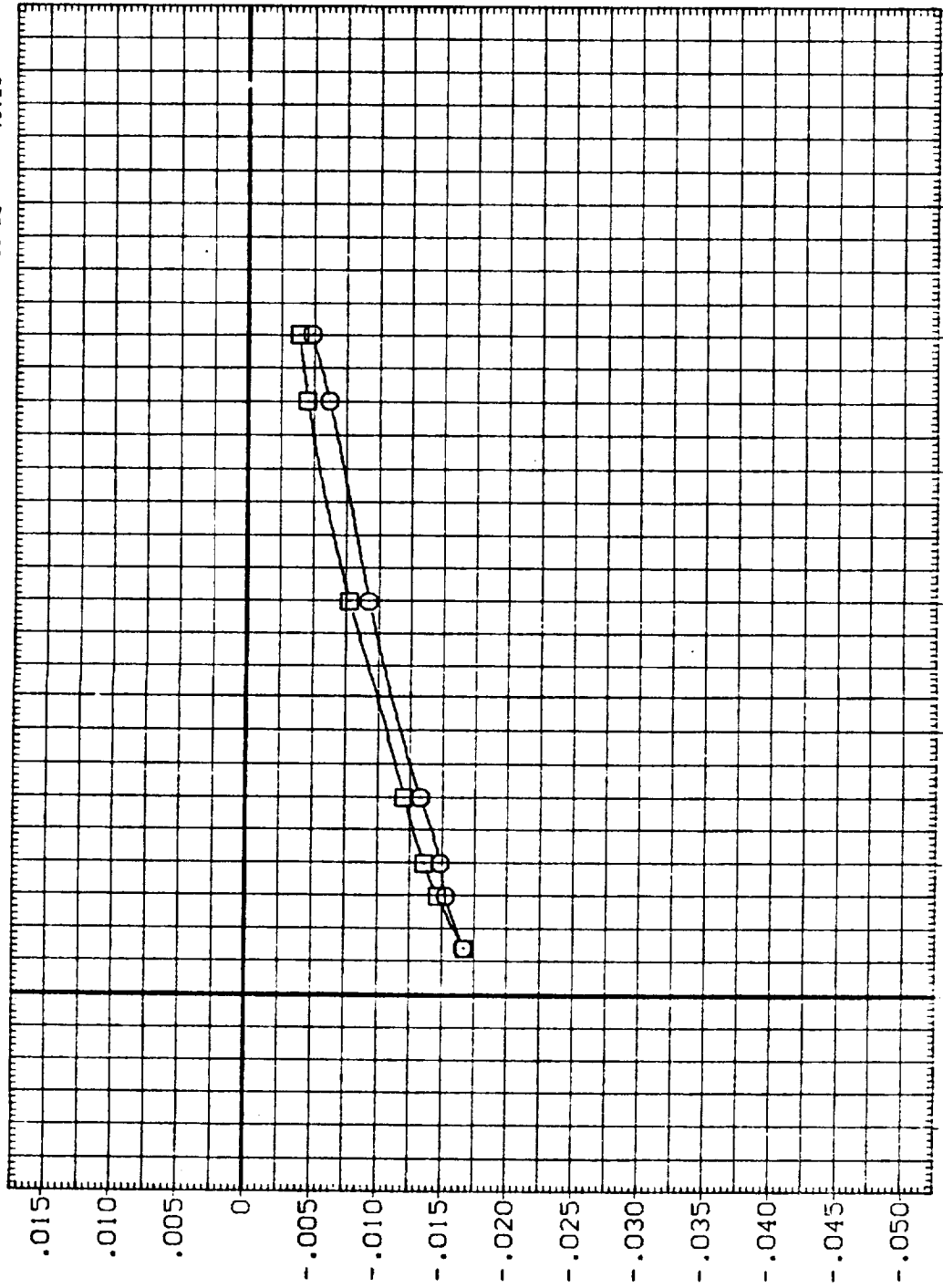


FIG. 21 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C OFF, IORB=6.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER DATA	ELEVON	ORRB	MACH	REFERENCE INFORMATION
(4NHV13)	ARC 14-120(CA23B)	747/1 AT1 Q2S1	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NHV18)	ARC 14-120(CA23B)	747/1 AT1 Q2S1	5.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

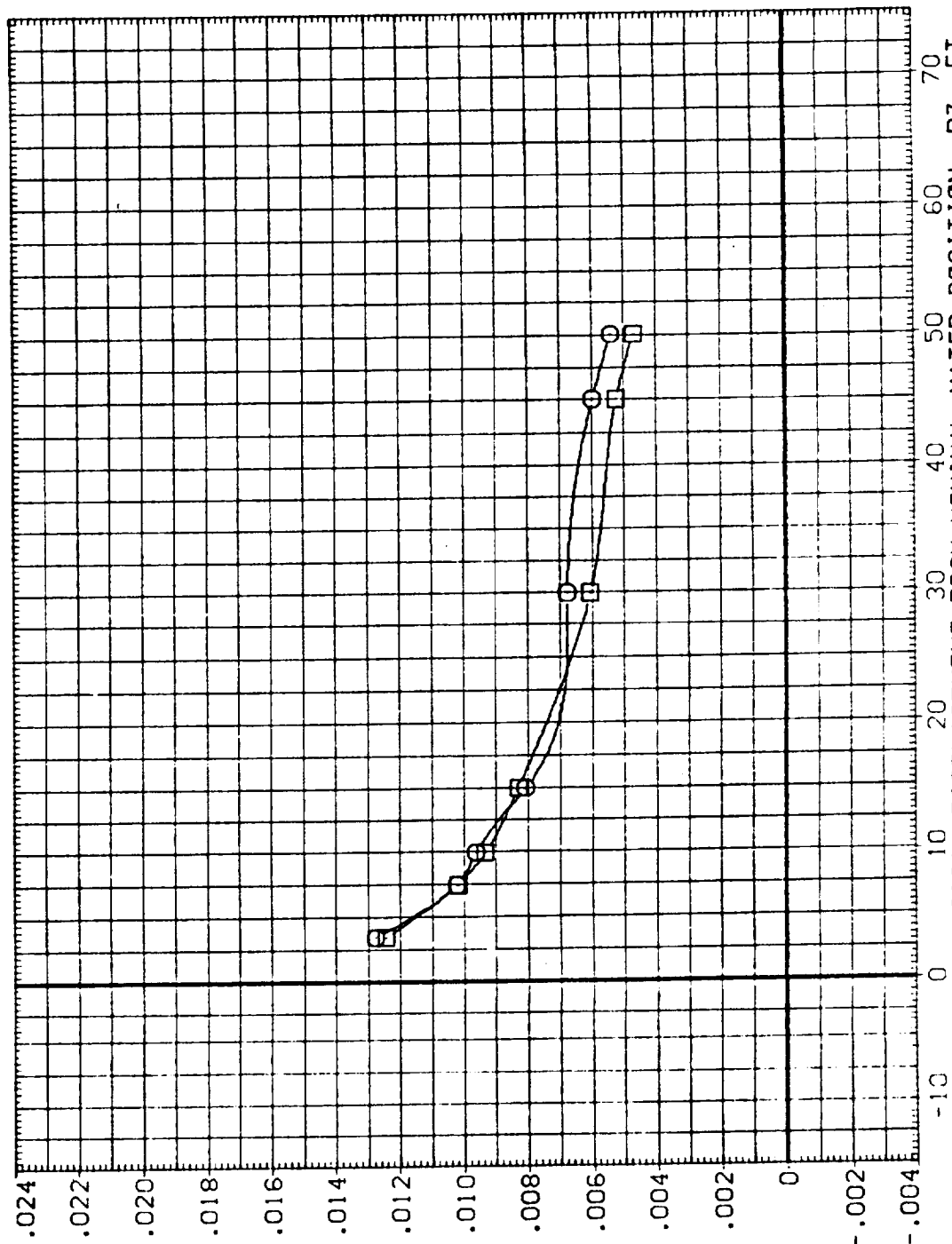


FIG. 21 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=6.0 DEG)

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (4NHV13)    ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
 (4NHV18)    ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

DY    ELEVON    IORB    MACH  
 .000    5.000    6.000    .600  
 10.000    5.000    6.000    .600

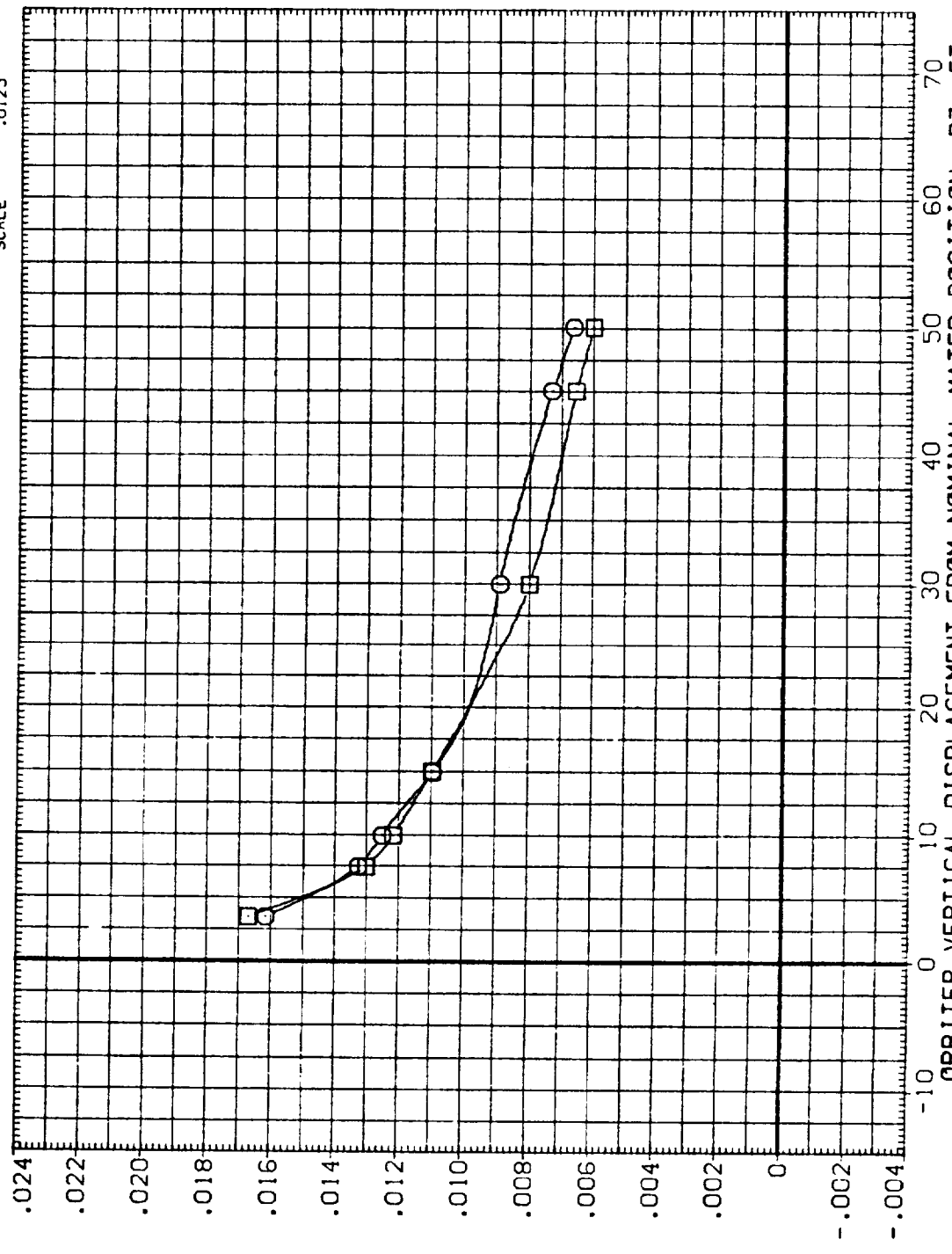


FIG. 21 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., IORB=6.0 DEG)  
 (B)ALPHAC= 4.00  
 ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION. DZ. FT.  
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INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM



DATA SET SYMBOL      CONFIGURATION DESCRIPTION  
 (UNHY10)      ARC 14-120(CA33B)    747/1 AT1 02S1 (CARRIER DATA)  
 (UNHY19)      ARC 14-120(CA33B)    747/1 AT1 02S1 (CARRIER DATA)

ORBITER    ELEVON    IORB    MACH    REFERENCE INFORMATION  
 DY    0.000    8.000    .600    SREF    5500.0000    SC.FT.  
 10.000    8.000    .600    LREF    327.7800    IN.  
 XMRP    1339.9000    IN. XE  
 YMRP    190.7500    IN. YE  
 ZMRP    .0000    IN. ZC  
 SCALE    .0125

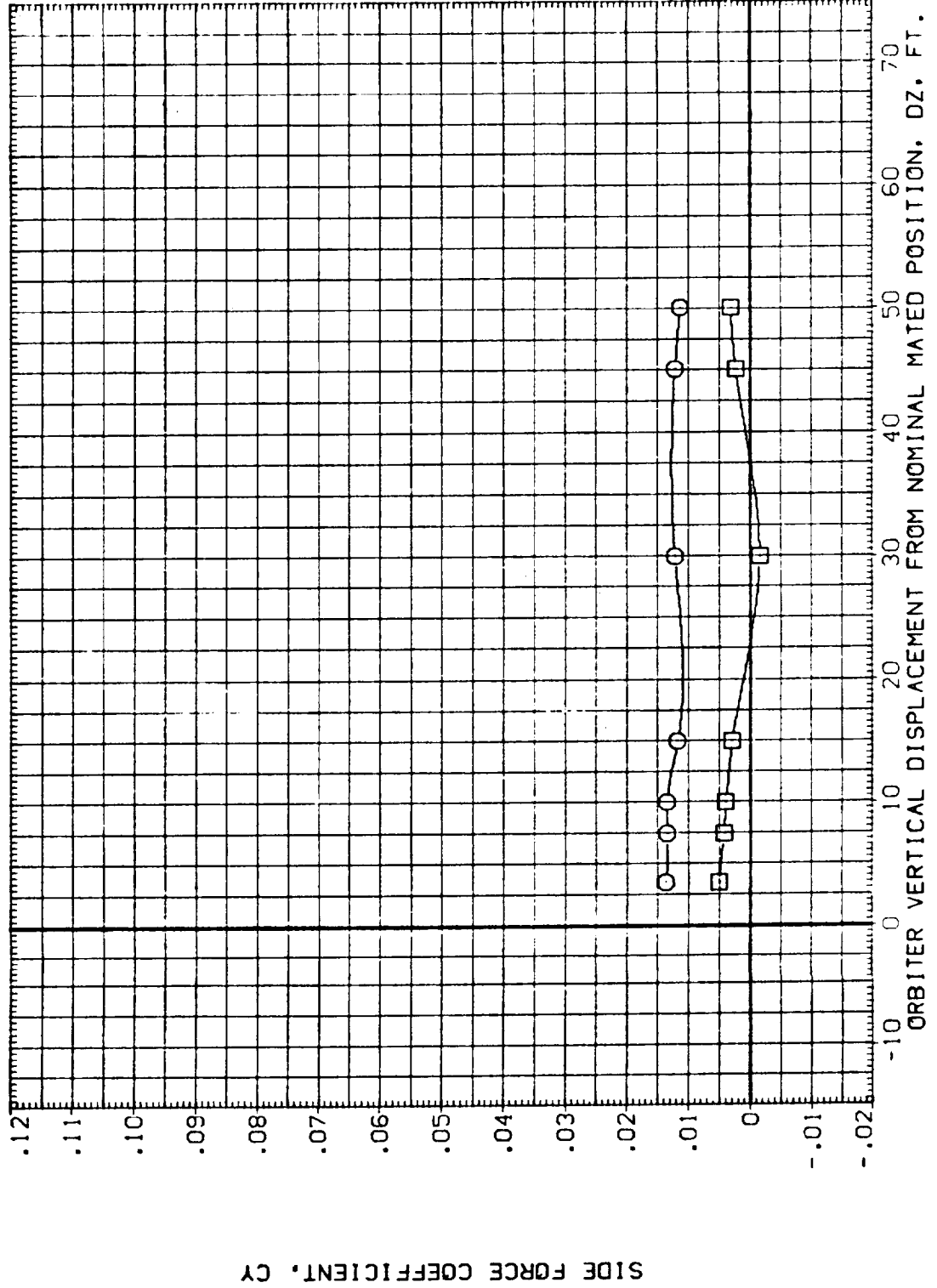


FIG. 22 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=8.0 DEG)  
 (A)ALPHAC= 2.00      PAGE 151

DATA SET SYMBOL  
(UNHY10)  
(UNHY19)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

DY  
10.000

ELEVON  
5.000

IORB  
8.000

MACH  
.600

REFERENCE INFORMATION  
SREF 5500.0000 50.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN.  
YMRP .0000 IN.  
ZMRP 190.7500 IN.  
SCALE .0125

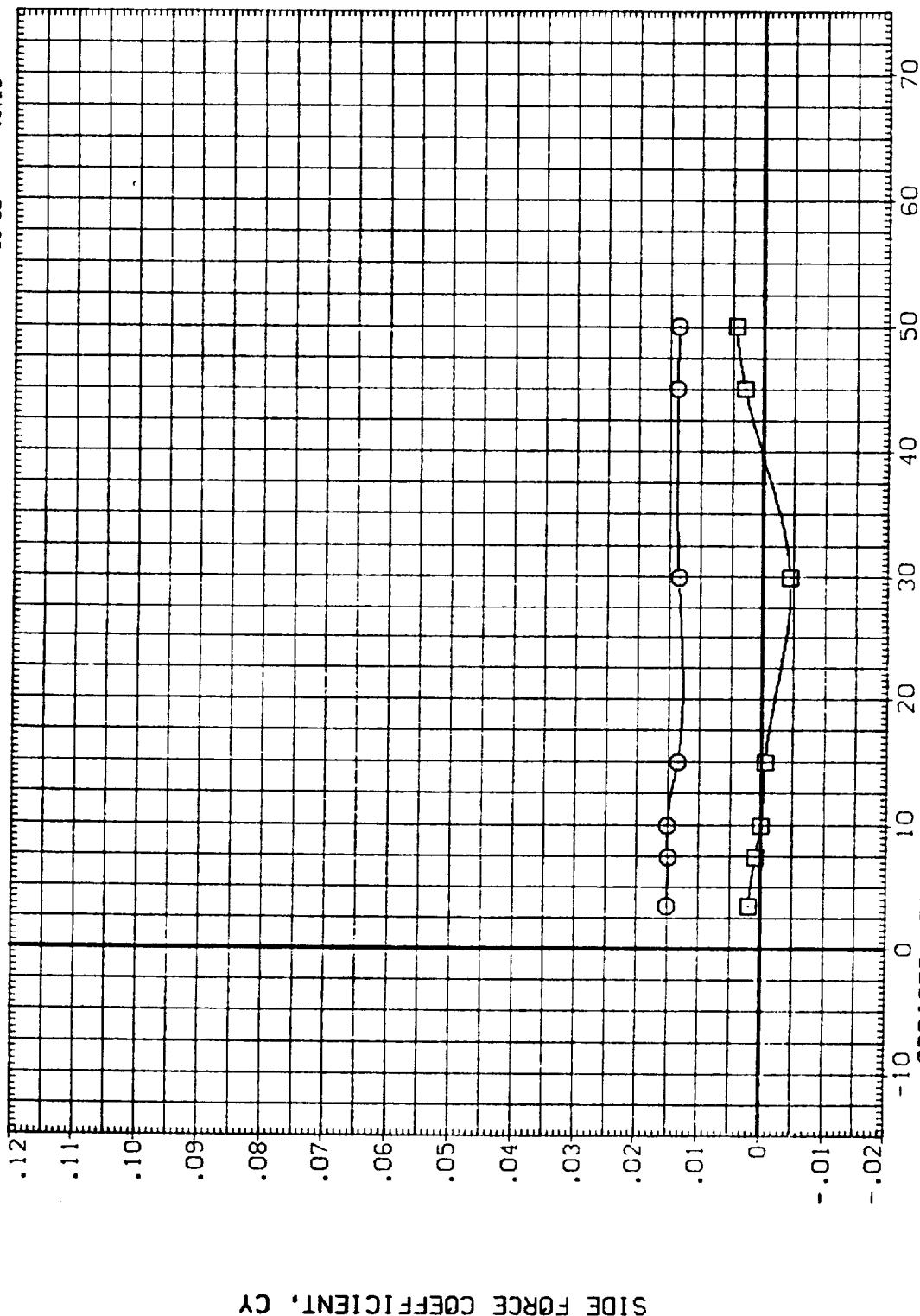
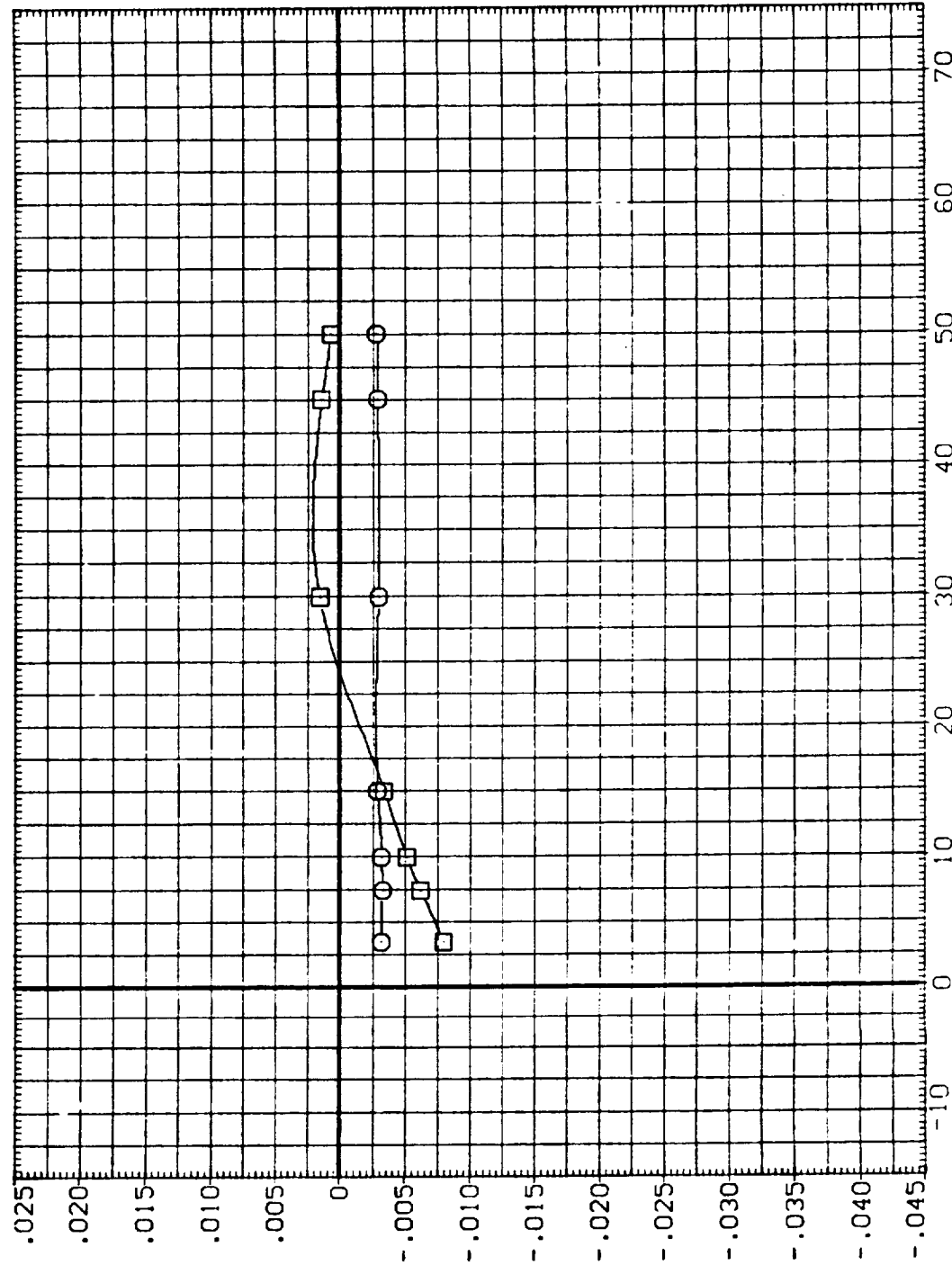


FIG. 22 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		DY		ELEVON		IORB		MACH		REFERENCE INFORMATION	
(UNHY10)	□	ARC 14-120(CA238)	747/1 AT1 0251 (CARRIER DATA)	.000	5.000	8.000	.600	SREF	5500.0000	50. FT.			
(UNHY19)	□	ARC 14-120(CA238)	747/1 AT1 0251 (CARRIER DATA)	10.000	5.000	8.000	.600	LREF	327.7800	IN.			
								BREF	2348.0400	IN.			
								XMRP	1339.5000	IN. XC			
								ZMRP	190.7500	IN. ZC			
								SCALE	.0125				



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 22 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=8.0 DEG)

(A)ALPHAC= 2.00

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DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
(UNHY10)    ARC 14-120(CA238)    747/1 AT1 02S1 (CARRIER DATA)  
(UNHY19)    ARC 14-120(CA238)    747/1 AT1 02S1 (CARRIER DATA)

DY    ELEVON    TORB    MACH  
.000    5.000    8.000    .600  
10.000    5.000    8.000    .600

REFERENCE INFORMATION  
SREF    5500.0000    SQ.FT.  
LREF    327.7800    IN.  
BREF    2348.0400    IN.  
XMRP    1339.9000    IN. XC  
YMRP    .0000    IN. YC  
ZMRP    190.7500    IN. ZC  
SCALE    .0125

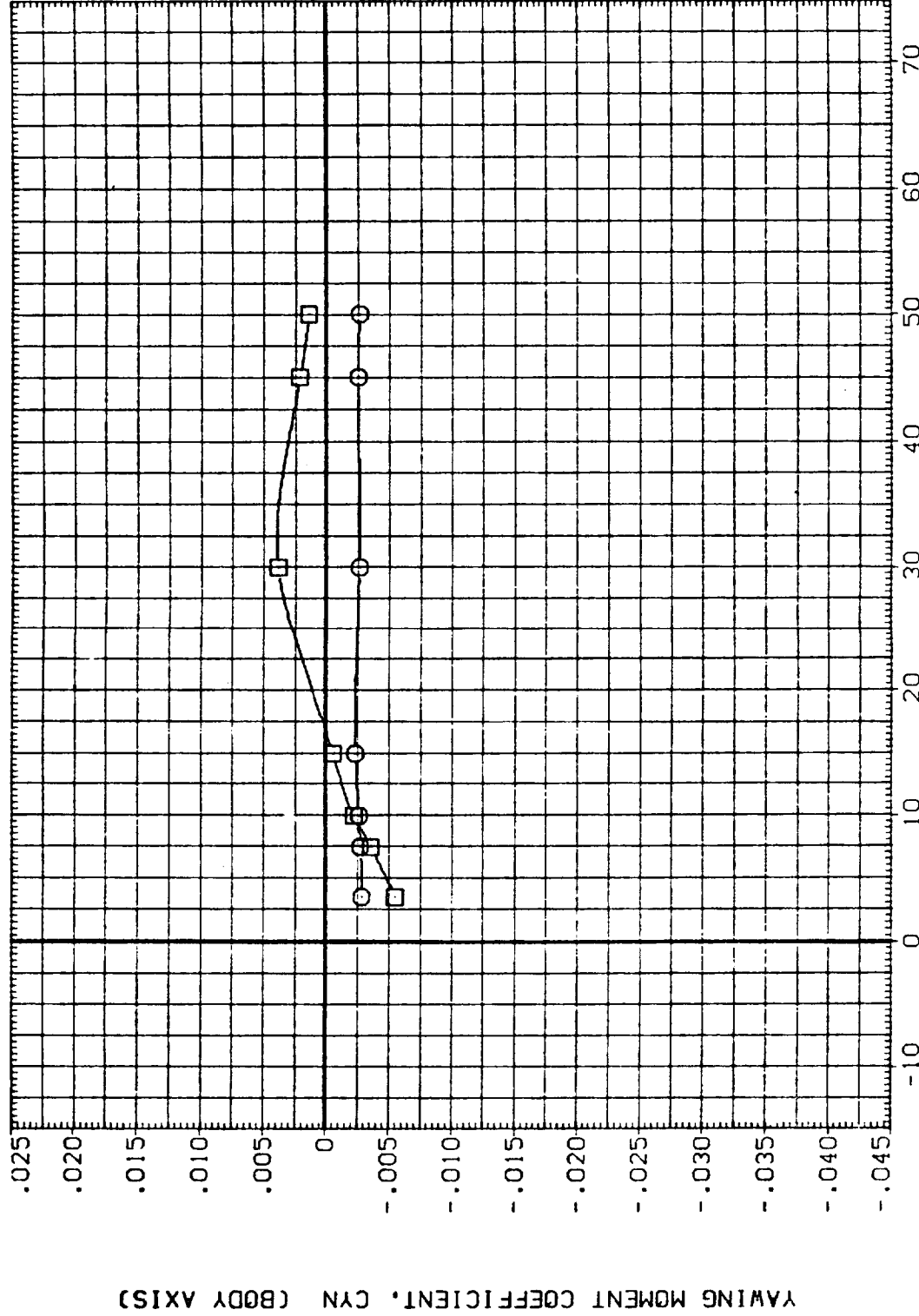


FIG. 22 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF, TORB=8.0 DEG)  
(B)ALPHAC= 4.00    PAGE 154

DATA SET SYMBOL      CONFIGURATION DESCRIPTION  
(UNHY10)      ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
(UNHY19)      ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(UNHY10)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	8.000	.600	SREF 5500.0000 SQ.FT. LREF 327.7800 IN. BREF 2348.0400 IN. XMRP 1339.9000 IN. XC YMRP .0000 IN. YC ZMRP 190.7500 IN. ZC SCALE .0125

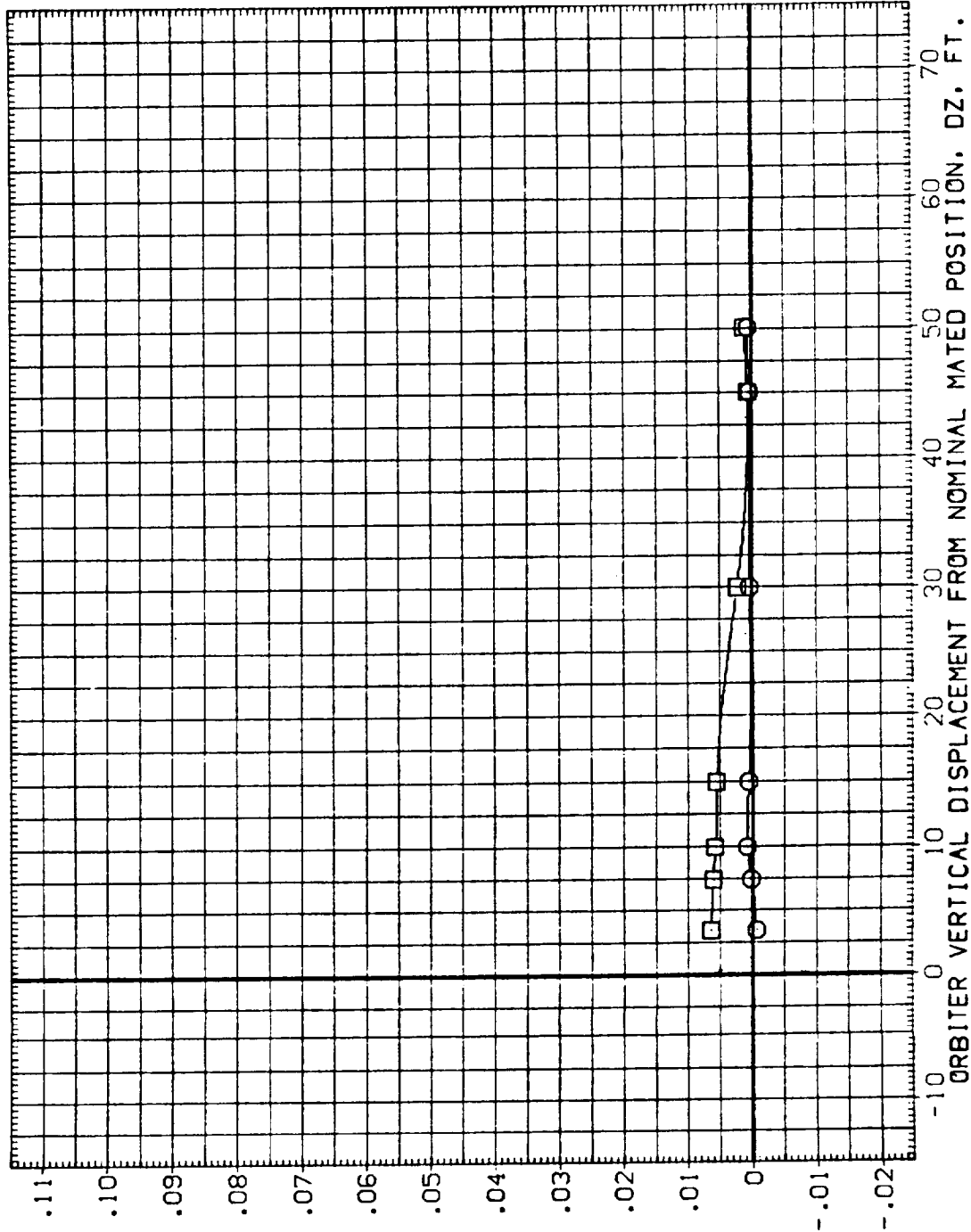


FIG. 22 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

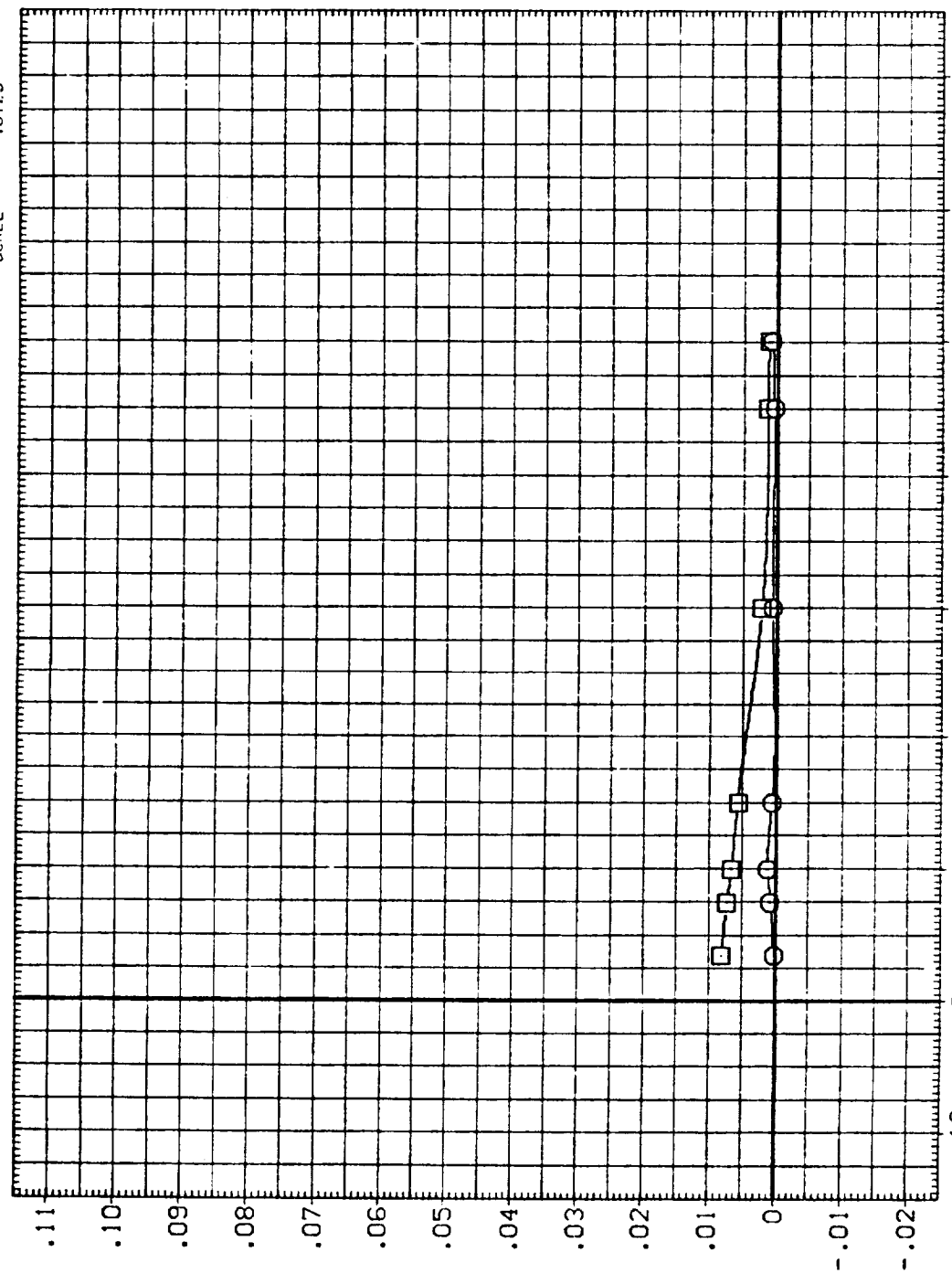
DATA SET SYMBOL  
(UNHY10)  
(UNHY19)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

DY 10.000  
ELEVON 5.000  
IORB 8.000  
MACH .600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

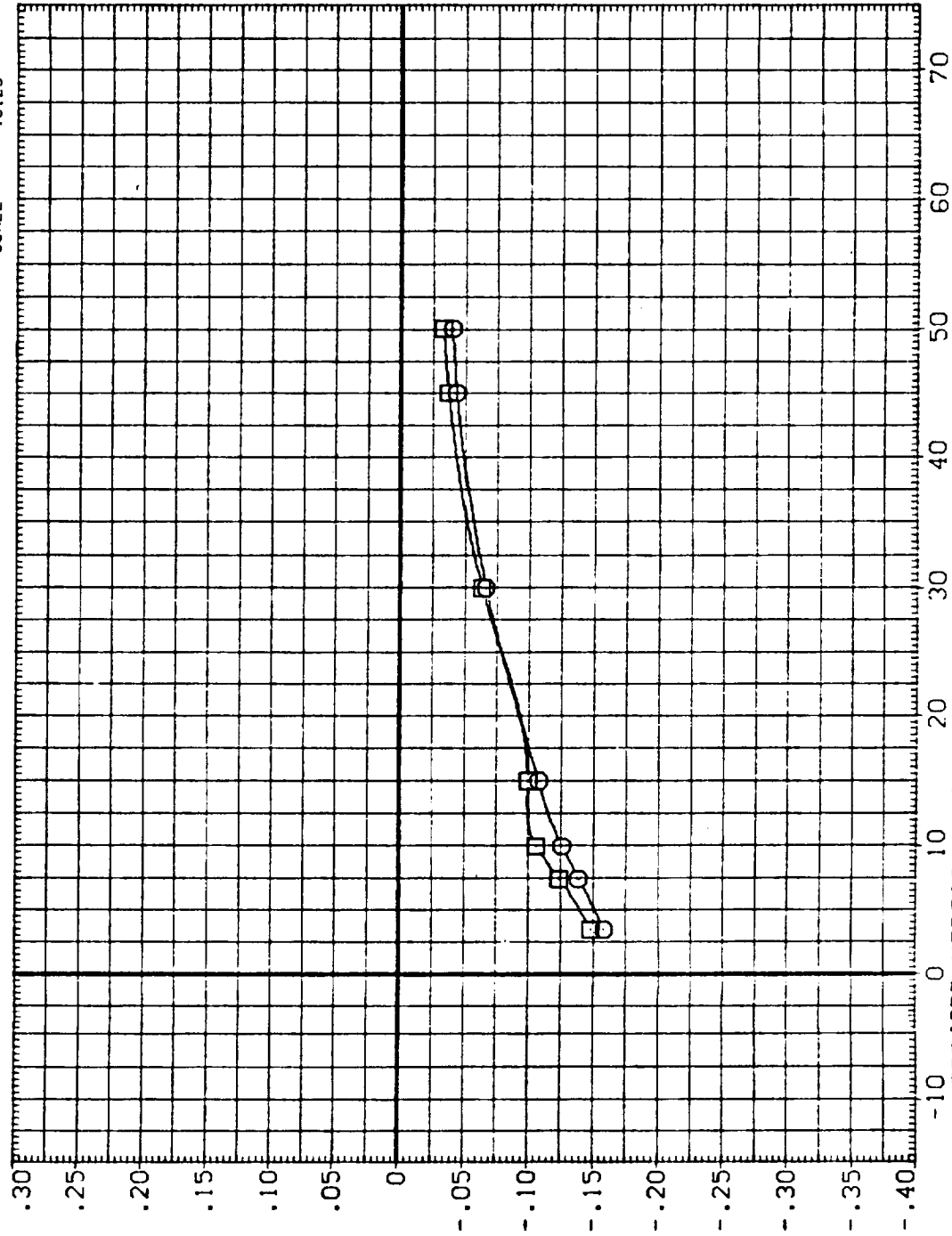
FIG. 22 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=8.0 DEG)

(B)ALPHAC= 4.00

DATA SET SYMBOL      CONFIGURATION DESCRIPTION  
 (PNHY10)      ARC 14-120(CA23B)    747/1 AT1 0251 (CARRIER DATA)  
 (PNHY19)      ARC 14-120(CA23B)    747/1 AT1 0251 (CARRIER DATA)

DY      ELEVON    IORB    MACH  
 .000    5.000    8.000    .600  
 10.000    5.000    8.000    .600

REFERENCE INFORMATION  
 SREF    5500.0000    50. FT.  
 LREF    327.7800    IN.  
 BREF    2348.0400    IN.  
 XMRP    1339.9000    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 22 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

(A)ALPHAC= 2.00

DATA SET SYMBOL  
(PNHY10)  
(PNHY19)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

DY  
10.000

ELEVON  
5.000

MACH  
.600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

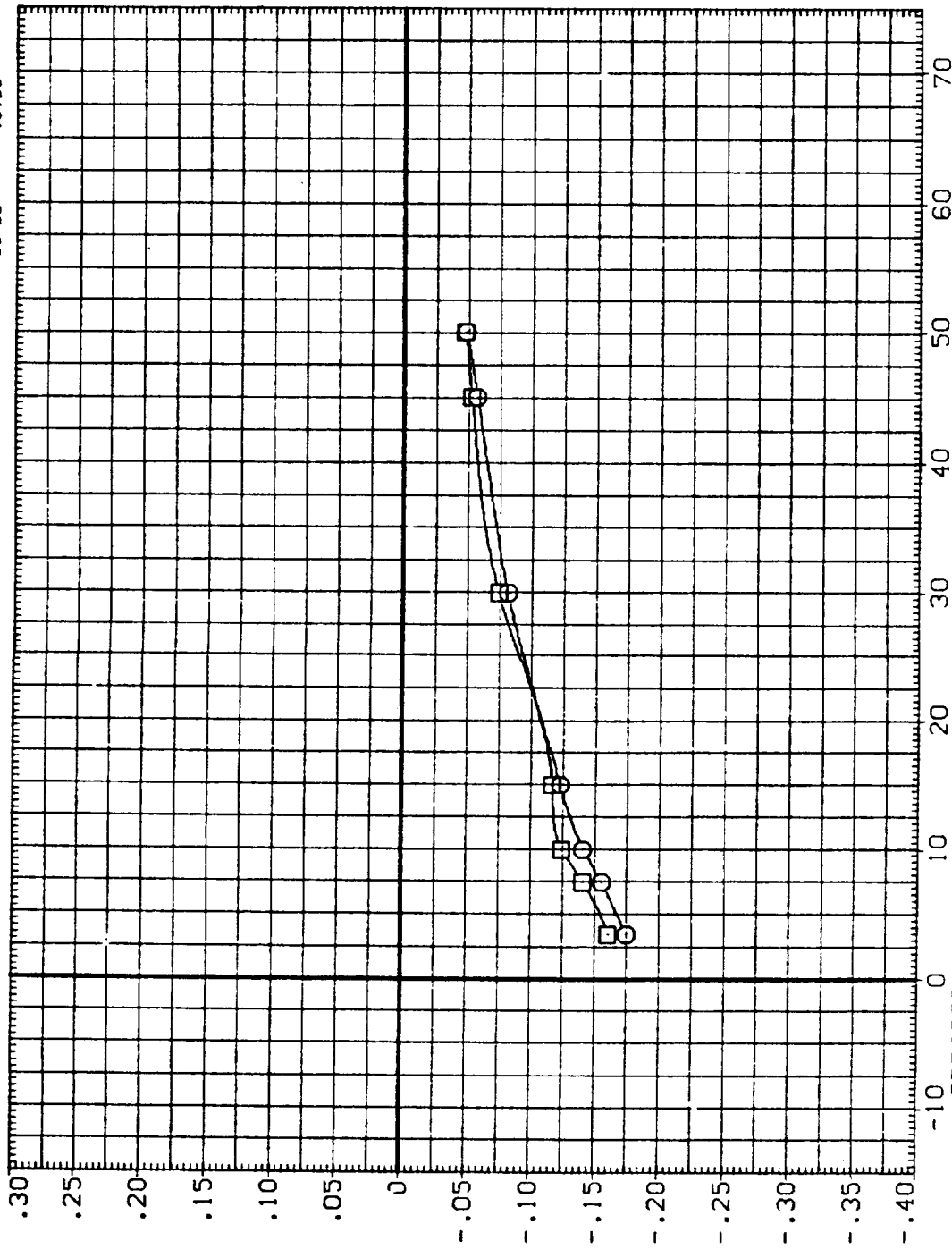


FIG. 22 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C OFF,10RB=8.0 DEG)  
(B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION	
(PNHY10)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	8.000	.600	SREF	5500.0000 SQ.FT.
(PNHY19)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	8.000	.600	LREF	327.7800 IN.
						BREF	2348.0400 IN.
						XMRP	1339.9000 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0125

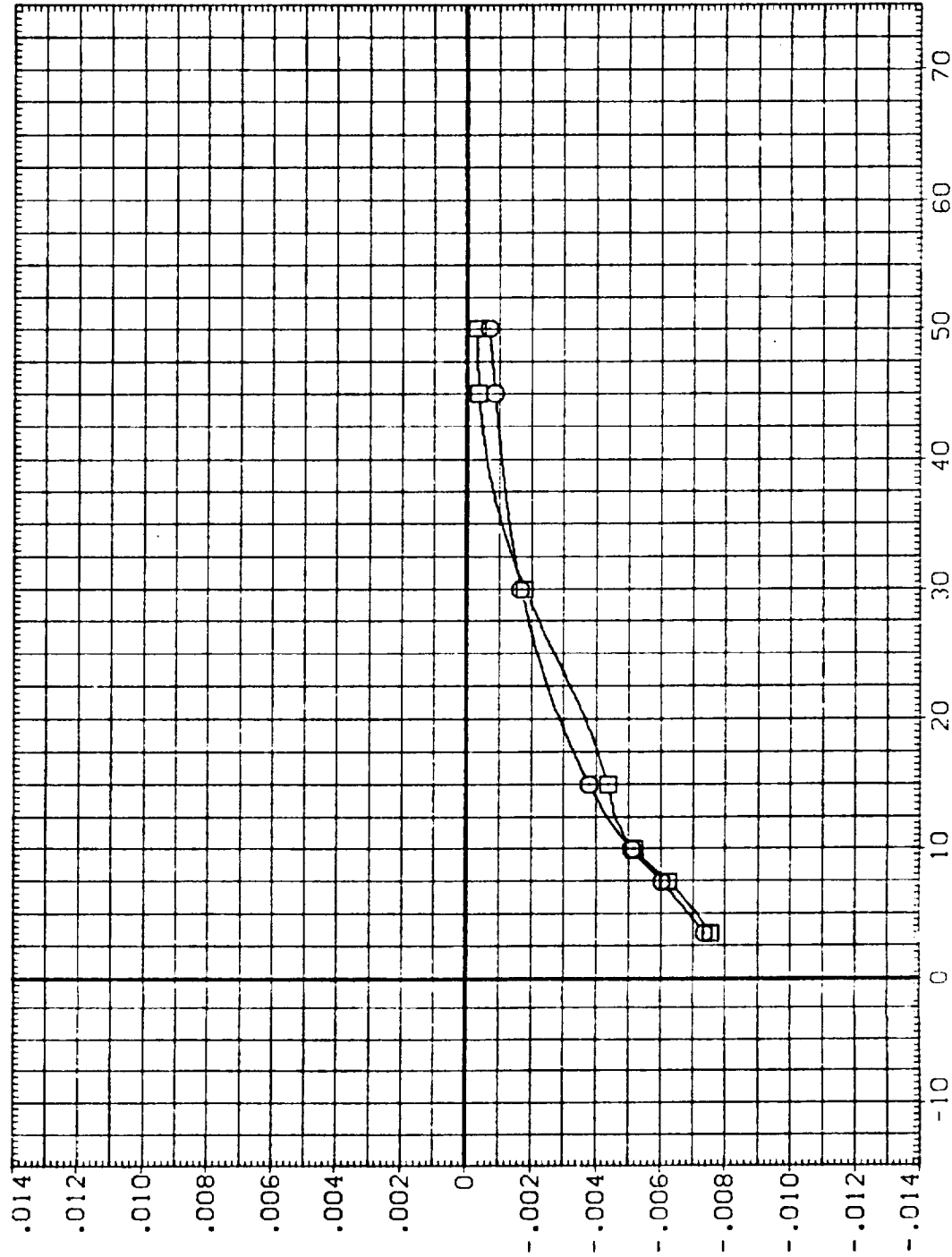


FIG. 22 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
 (A) ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNHY10) ARC 4-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)  
 (PNHY19) ARC 4-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

DY .000  
 10.000

ELEVON 5.000  
 5.000

IORB 8.000  
 8.000

MACH .600  
 .600

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN.  
 YMRP .0000 IN.  
 ZMRP 190.7500 IN.  
 SCALE .0125

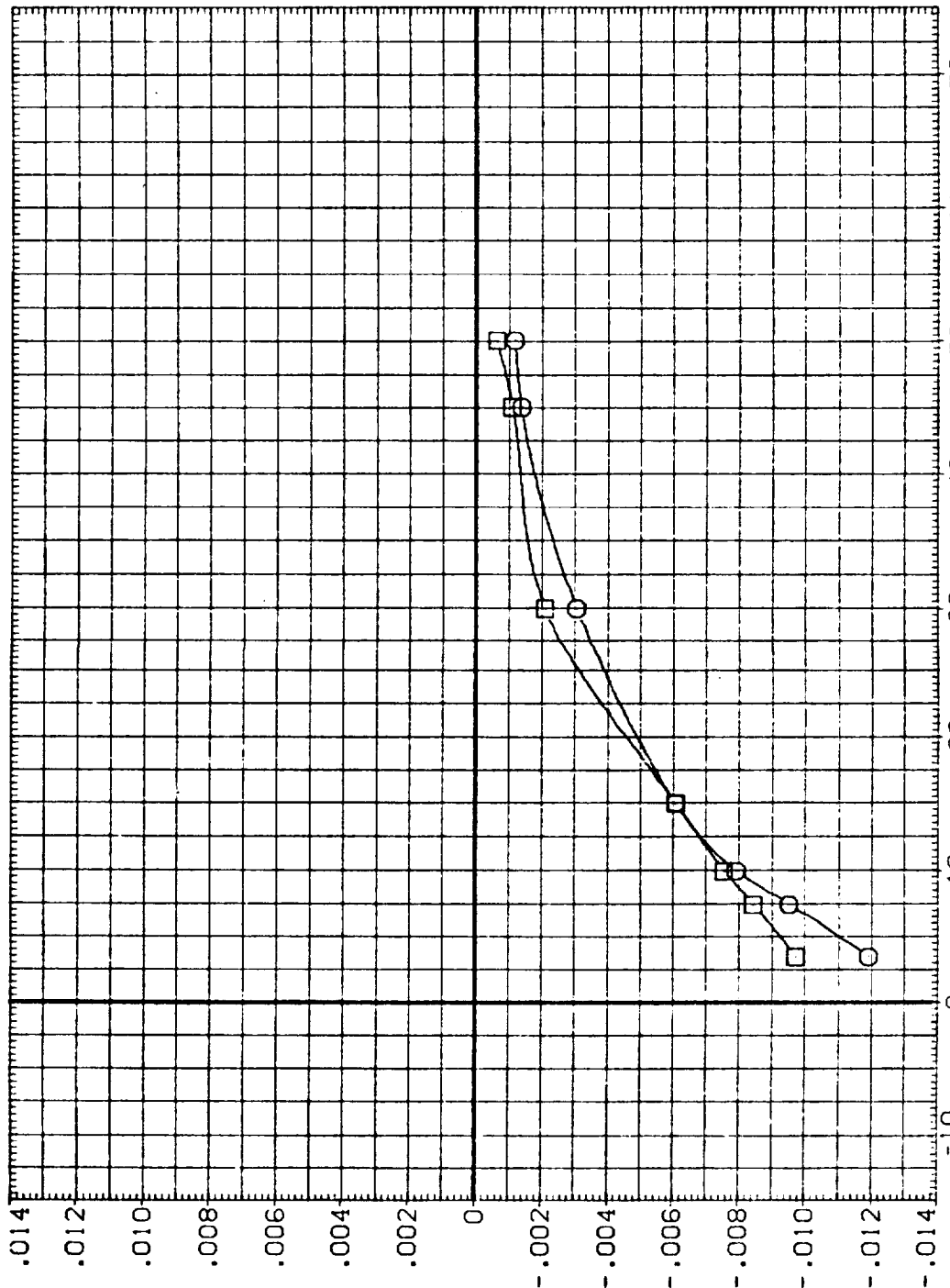


FIG. 22 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

(B) ALPHAC= 4.00

REFERENCE INFORMATION	
SREF	5500.0000 50.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN. XC
XMRP	1339.9000 IN. YC
YMRP	.0300 IN. ZC
ZMRP	190.7500
SCALE	.0125

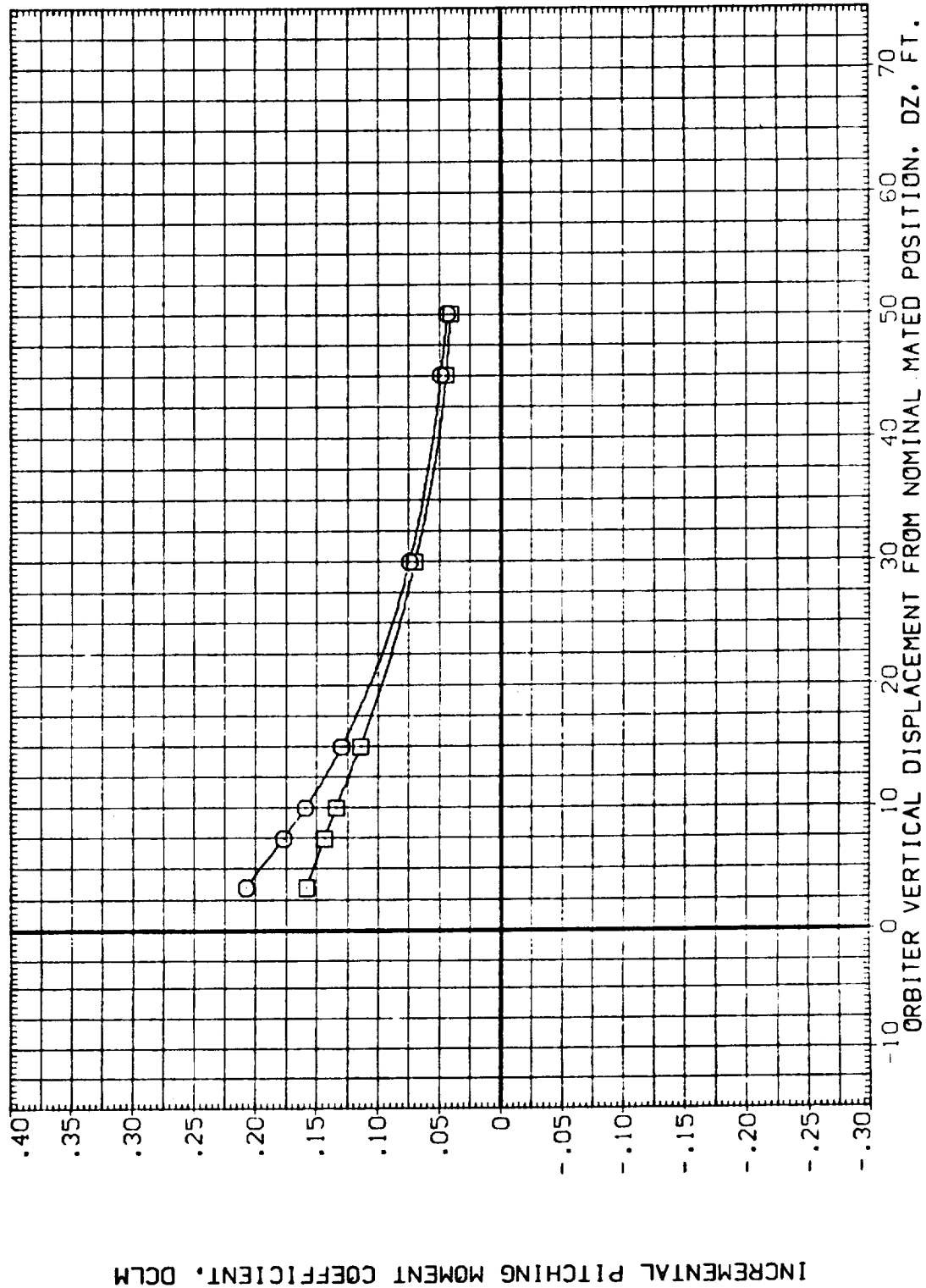


FIG. 22 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

DATA SET SYMBOL  
(PNHY10)  
(PNHY19)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

DY .000  
10.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XHRP 1339.9000 IN.  
YHRP 190.7500 IN.  
ZHRP 190.7500 IN.  
SCALE .0125

MACH .600  
.600

IORB 8.000  
8.000

ELEVON 5.000  
5.000

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

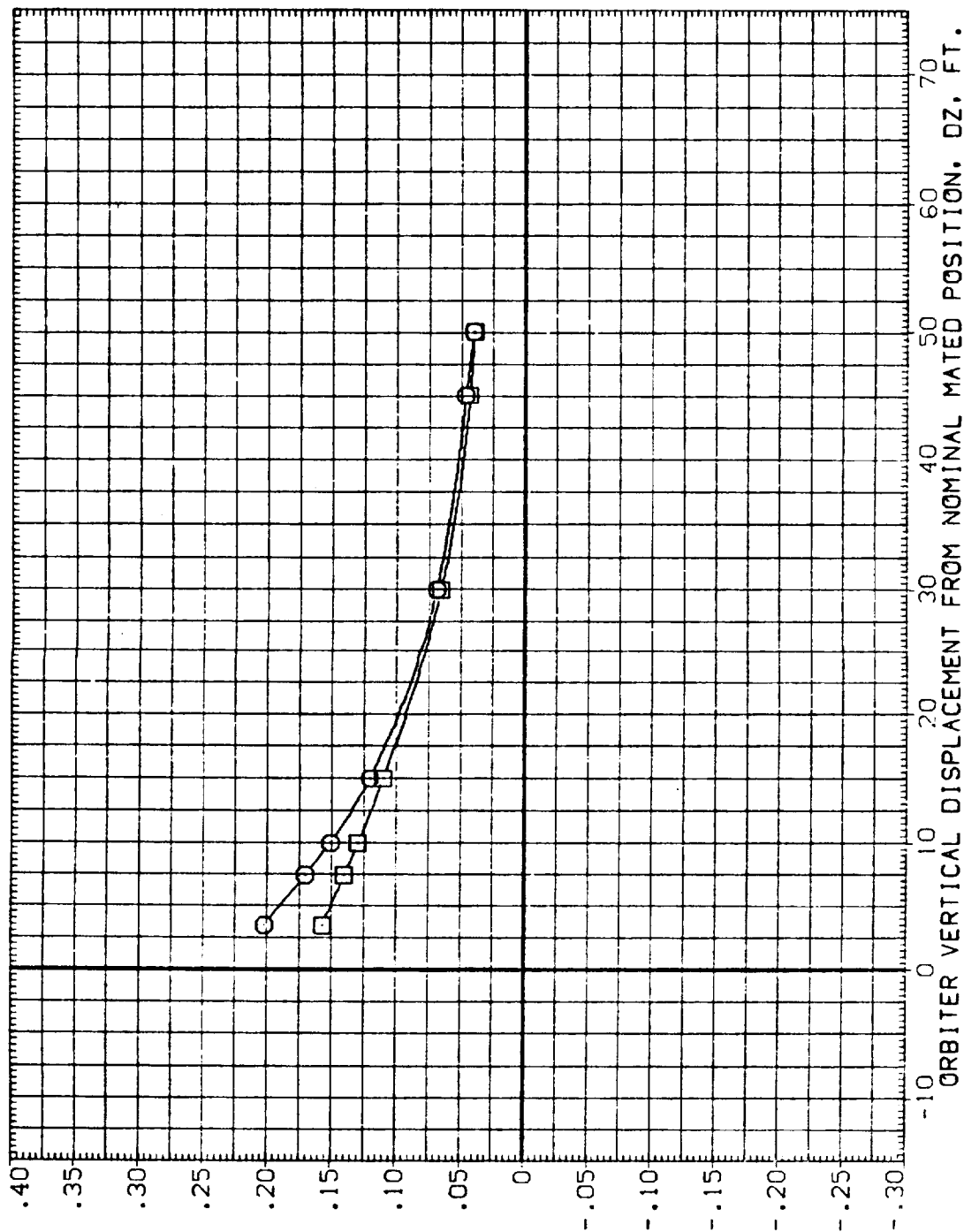


FIG. 22 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., IORB=8.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNHV10)	ARC 14-120(CA239)	747/1 AT1 Q251 (ORBITER DATA)	5.000	8.000	.600	SREF 2690.0000 50.FT.
(VNHV19)	ARC 14-120(CA239)	747/1 AT1 Q251 (ORBITER DATA)	10.000	8.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. XG
						YMRP .0000 IN. YG
						ZMRP 375.0000 IN. ZG
						SCALE .0125

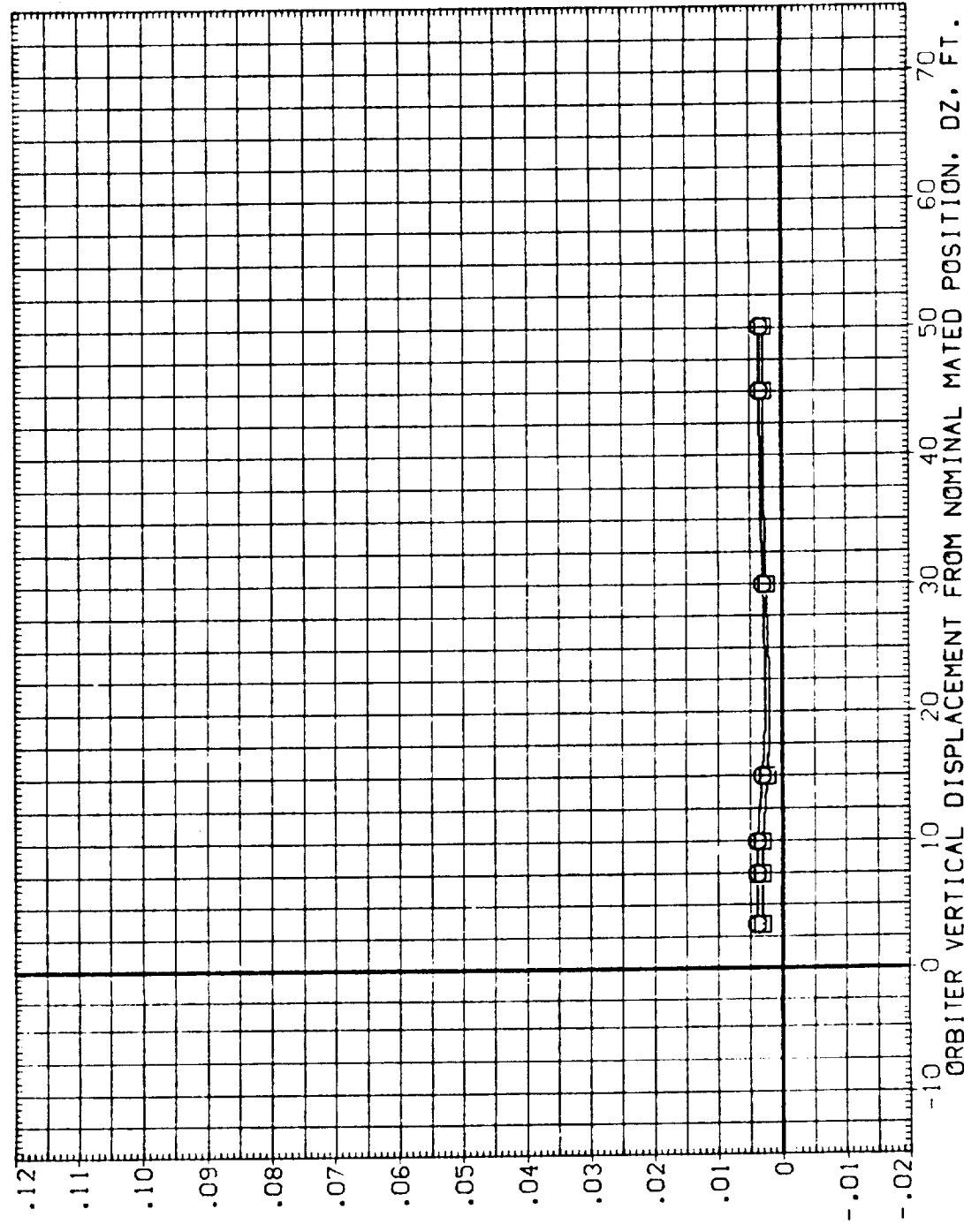


FIG. 23 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
 (A)ALPHAC= 2.00 PAGE 163

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(VNH10) 8 ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)  
(VNH19) 8 ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITTER DATA)

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0300 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

DY ELEVON TORB MACH  
.000 5.000 8.000 .600  
10.000 5.000 8.000 .600

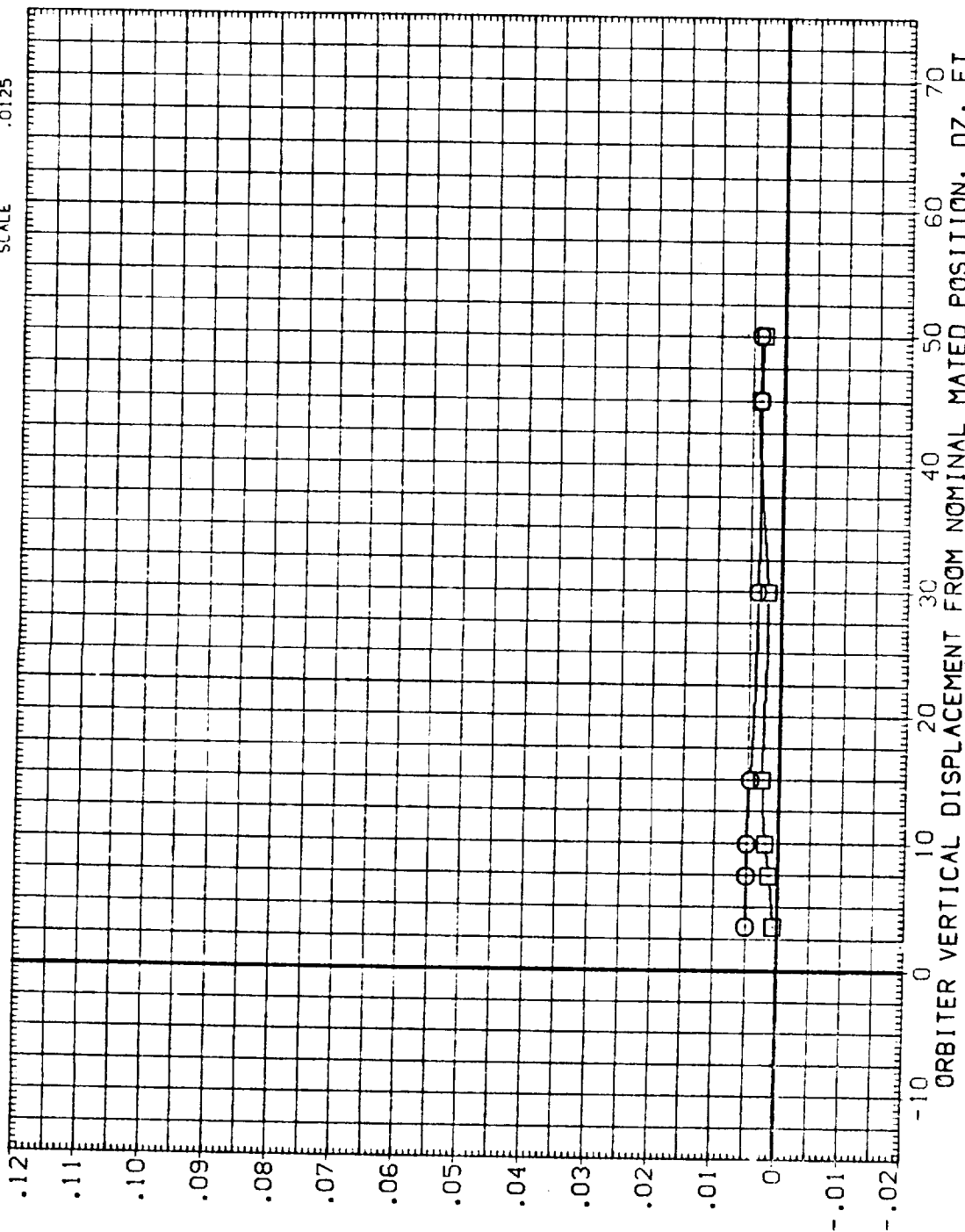


FIG. 23 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		DY		ELEVON		IORB		MACH		REFERENCE INFORMATION	
(VNH10)	ARC (4-120(CA238))	747/1	AT1	C2S1	(ORBITER DATA)	.000	5.000	8.000	.600	SREF	2690.0000	50.FT.	
(VNH19)	APC (4-120(CA238))	747/1	AT1	C2S1	(ORBITER DATA)	10.000	5.000	8.000	.600	LREF	474.8100	IN.	
										BREF	936.6800	IN.	
										XMRP	1109.0000	IN.	
										YMRP	.0000	IN.	
										ZMRP	375.0000	IN.	
										SCALE	.0125	ZO	

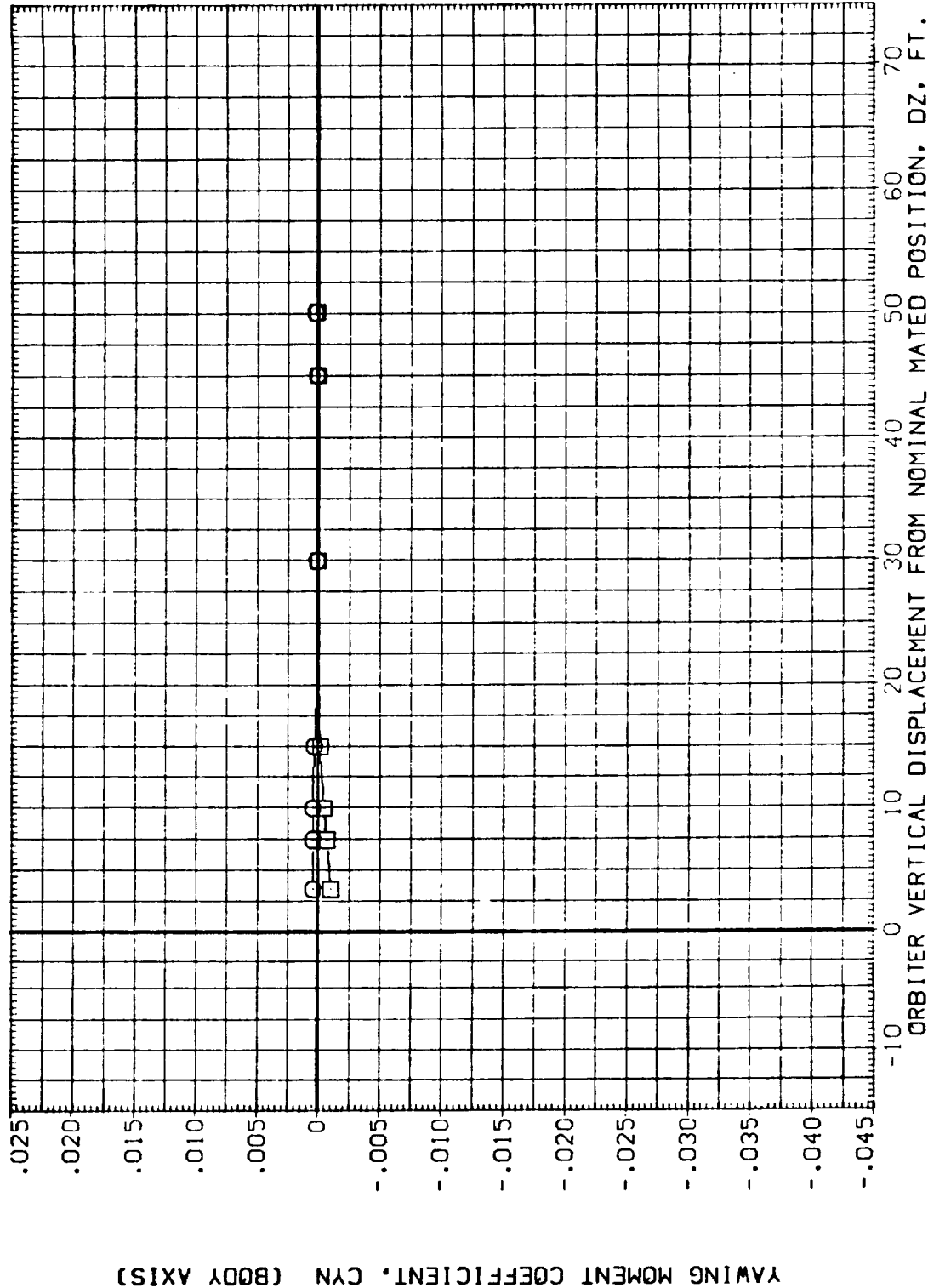


FIG. 23 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (VNH10) ARC 14-120(CA238) 747/1 AT: 0251 (ORBITER DATA)  
 (VNH19) ARC 14-120(CA238) 747/1 AT: 0251 (ORBITER DATA)

ORBITER  
 DY .000  
 ELEVON 5.000  
 10R8 8.000  
 MACH .600  
 REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

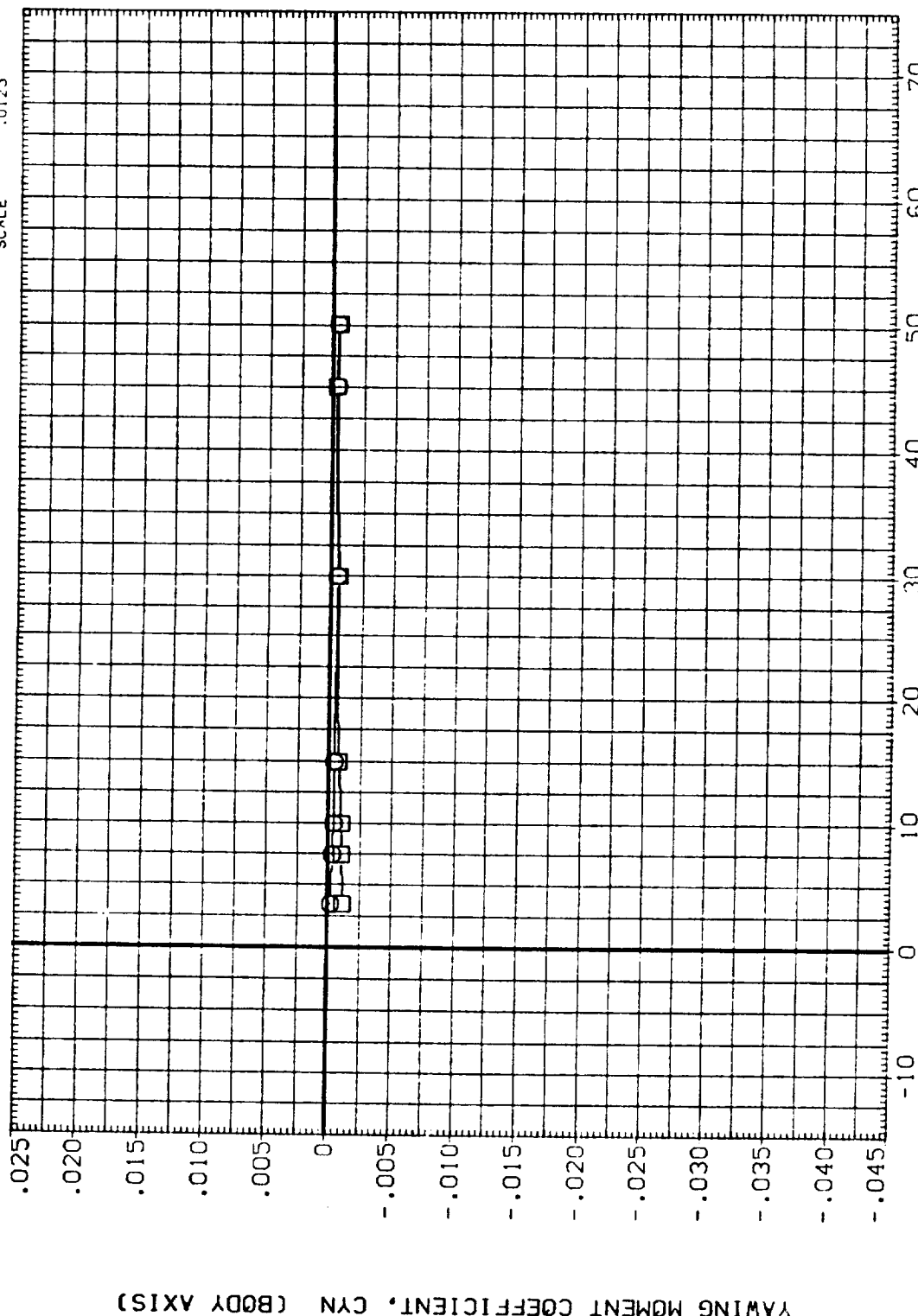


FIG. 23 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF, 10RB=8.0 DEG)  
 (B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
{ VNHX10 }	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	.000	5.000	8.000	.600	SREF 2690.0000 SQ.FT.
{ VNHX19 }	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	10.000	5.000	8.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

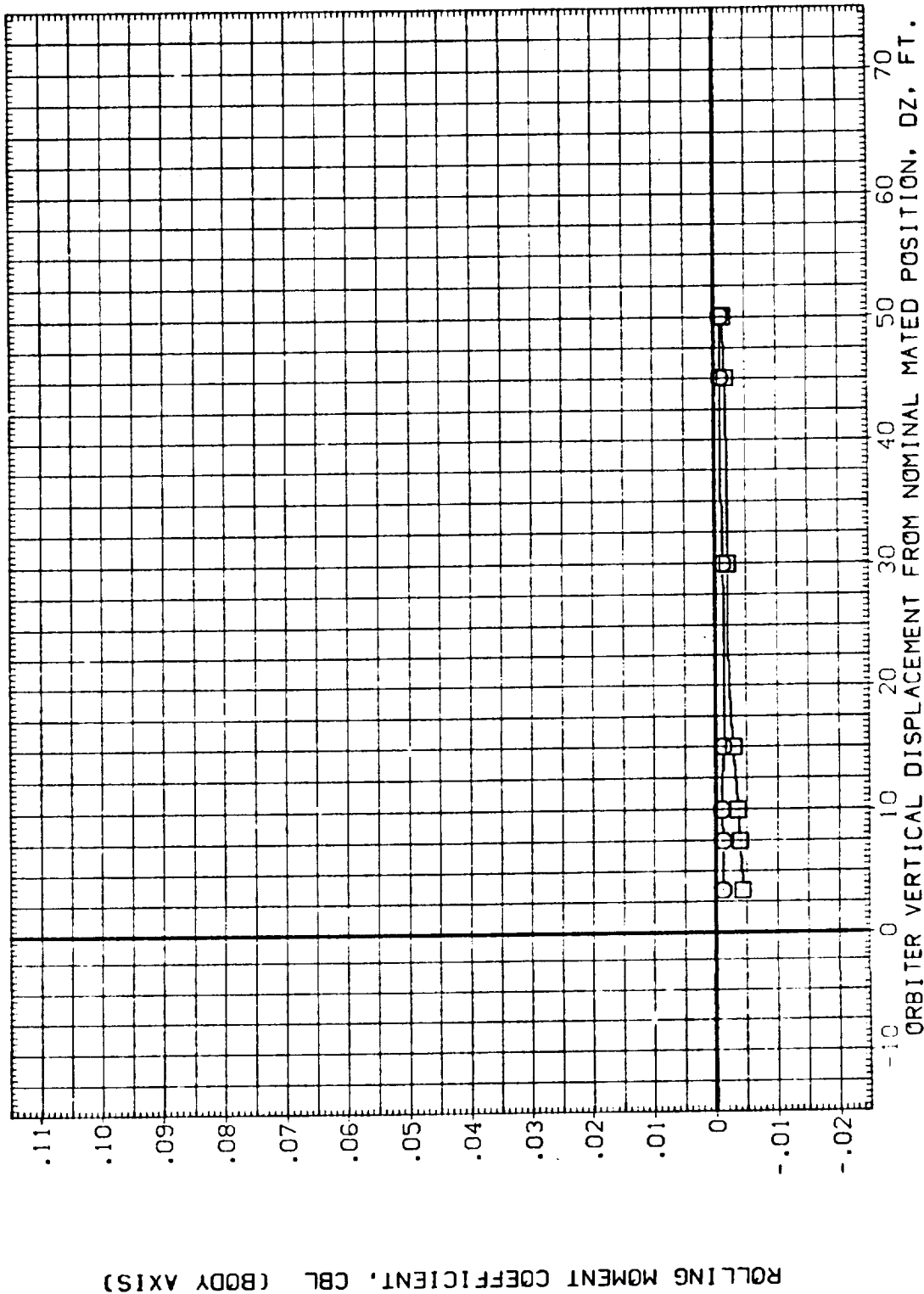


FIG. 23 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
(A) ALPHAC= 2.00

DATA SET SYMBOL (VNHY10) (VNHY19) CONFIGURATION DESCRIPTION ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA) ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA) DY .000 10.000 ELEVON 5.000 5.000 TORB 8.000 8.000 MACH .600 .600 REFERENCE INFORMATION SREF 2690.0000 50.FT. LREF 474.8100 IN. BREF 936.6800 IN. XMRP 1109.0000 IN. X0 YMRP .0000 IN. Y0 ZMRP 375.0000 IN. Z0 SCALE .0125

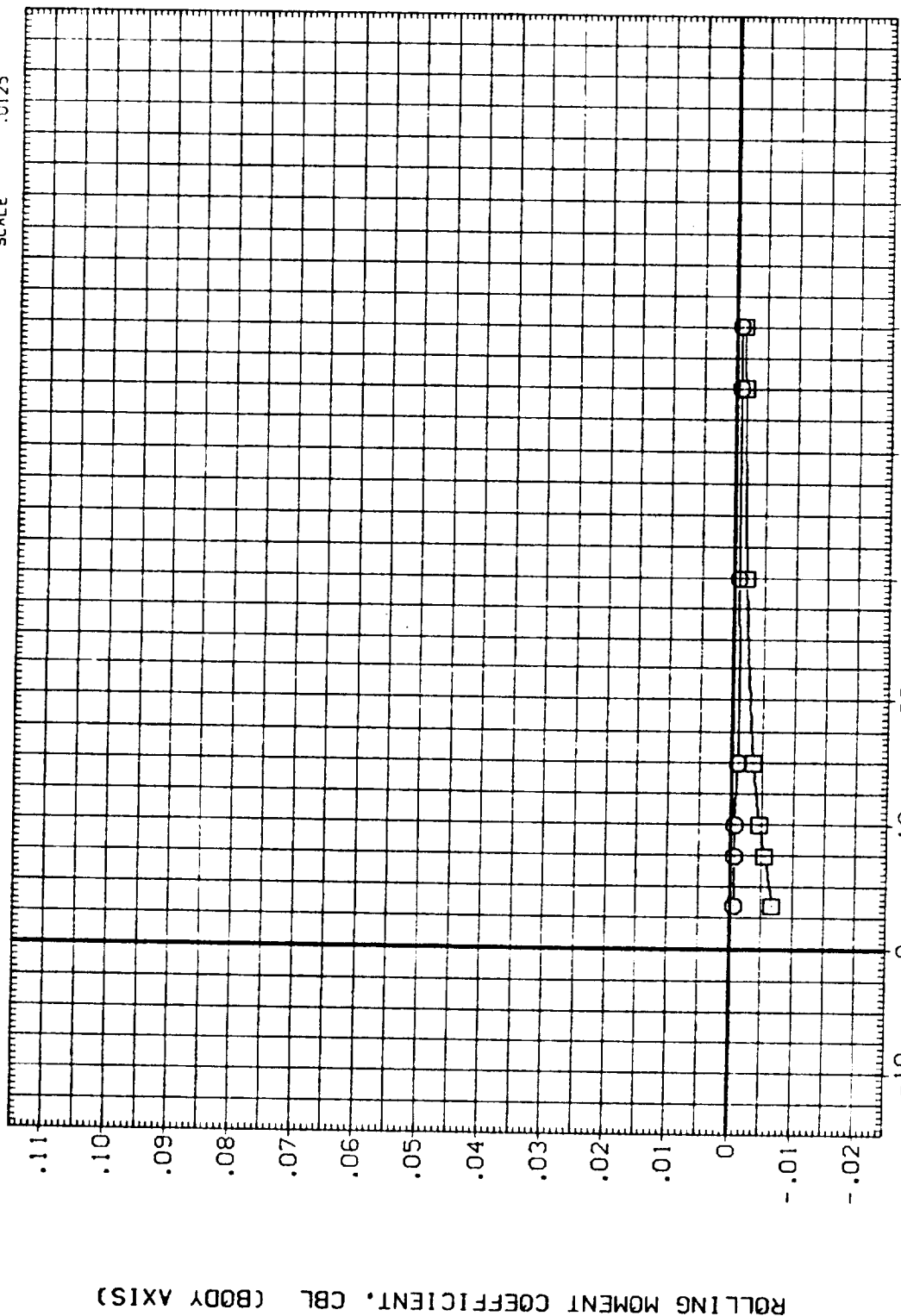


FIG. 23 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, TORB=8.0 DEG) (B) ALPHAC= 4.00

DATA SET SYMBOL  
(4NHV10)  
(4NHV19)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

DY  
10.000

ELEVON  
5.000

MACH  
.600

REFERENCE INFORMATION  
SREF 2690.0000 SQ. FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

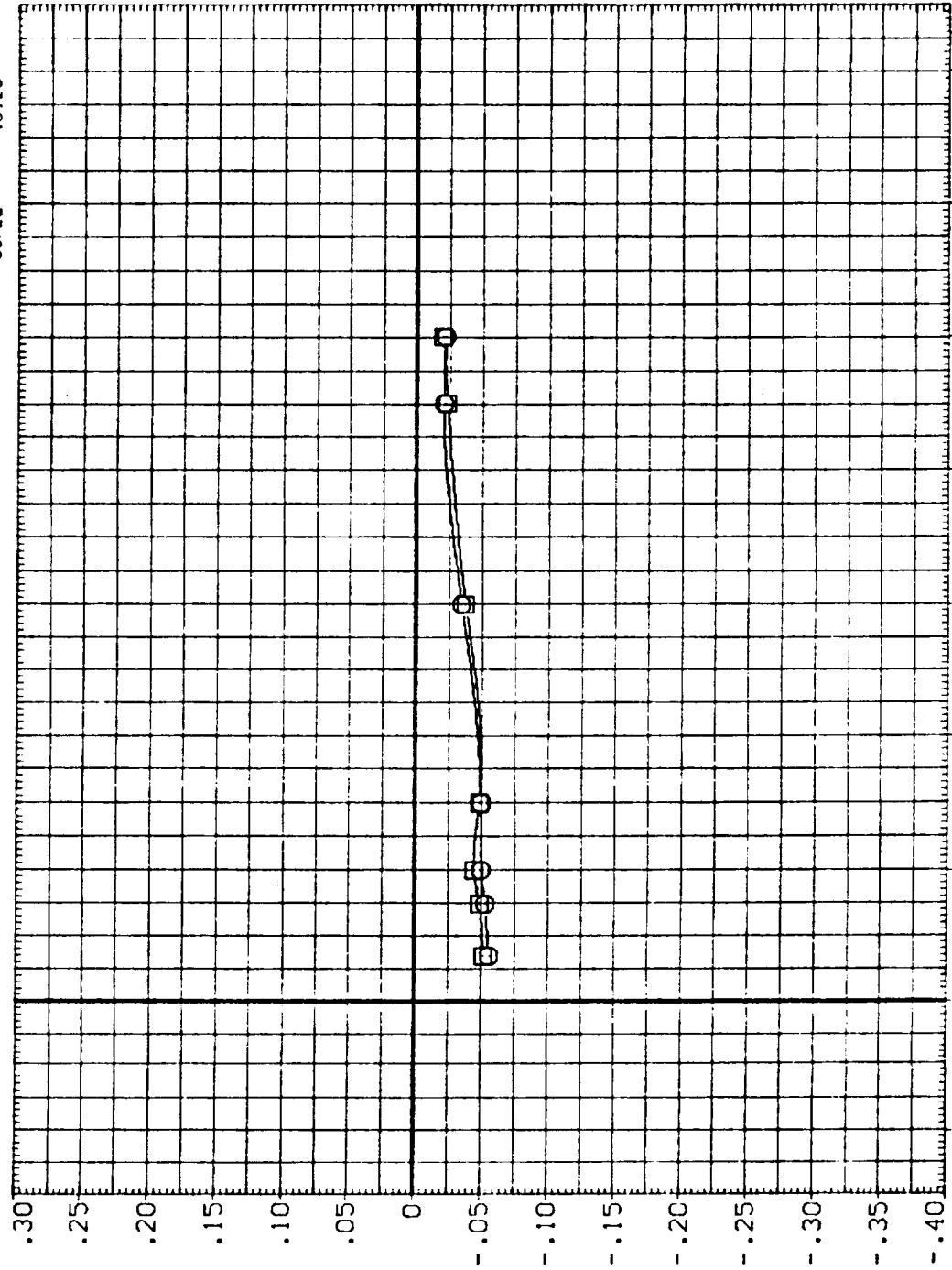


FIG. 23 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C OFF,IORB=8.0 DEG)  
(A)ALPHAC= 2.00  
PAGE 169

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHV10)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	.000	5.000	8.000	.600	SREF 2690.0000 SO.FT.
(4NHV19)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	10.000	5.000	8.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

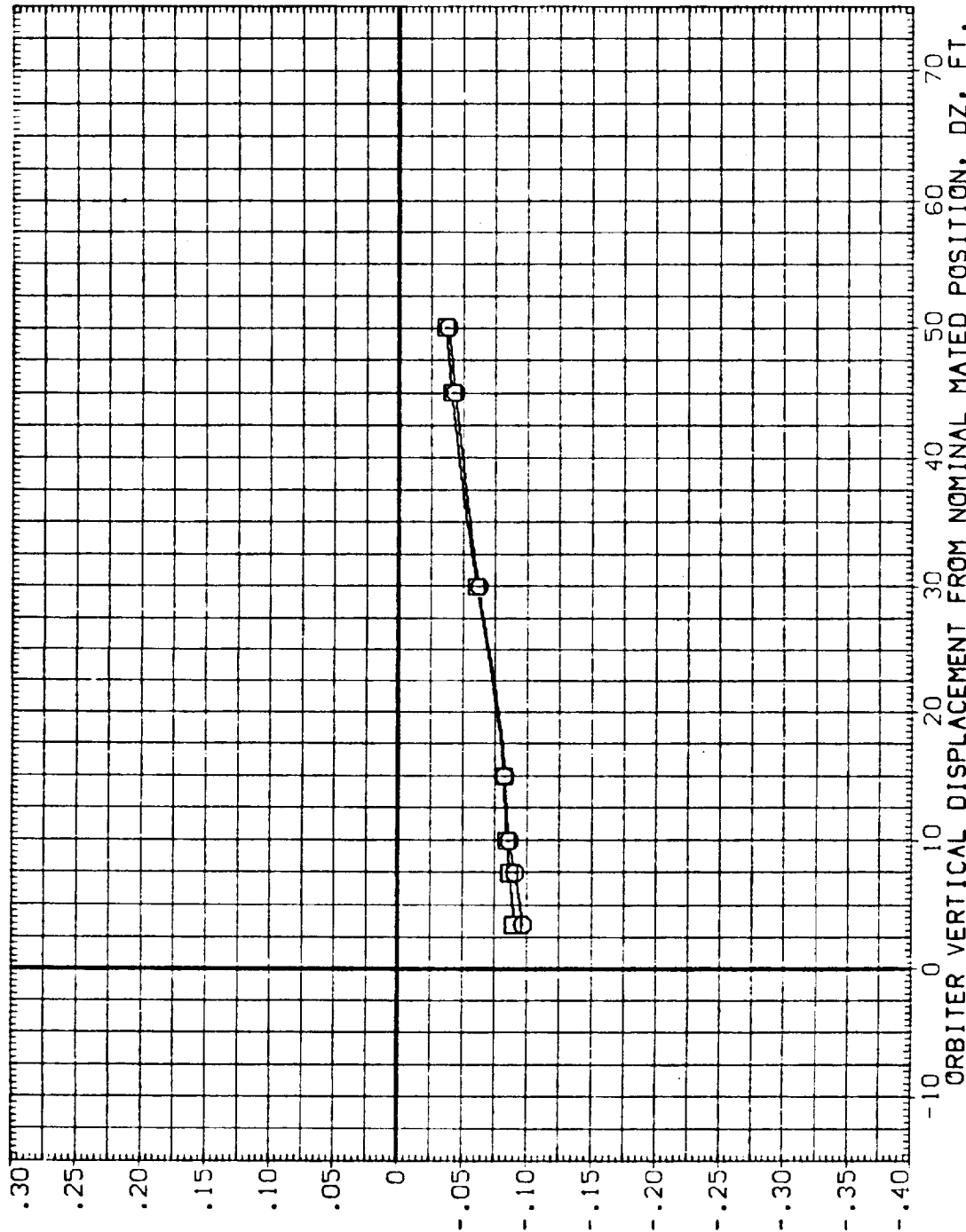


FIG. 23 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)  
(B)ALPHAC= 4.00

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XHRR	1109.0000 IN. X0
YMRP	.0000 IN. Y0
ZMRP	375.0000 IN. Z0
	SCALE .0125

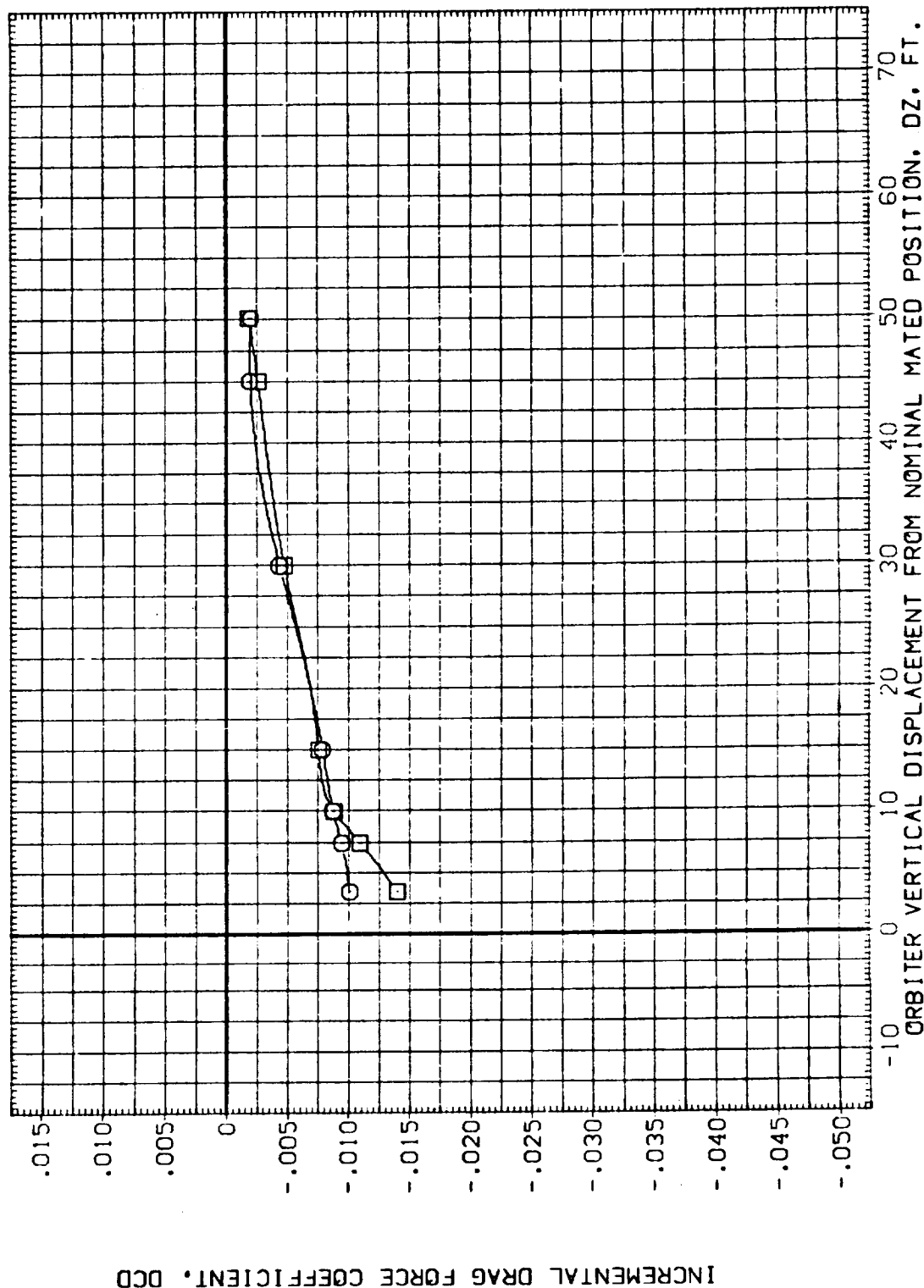


FIG. 23 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

[A]ALPHAC= 2.00

# DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NHY10) □

ARC 14-20(CA23B) 747/1 AT1 02S1 (ORB1TER DATA)

ARC 14-20(CA23B) 747/1 AT1 02S1 (ORB1TER DATA)

DY 10.000

ELEVON 5.000

IORB 8.000

MACH .600

SREF 2690.0000

LREF 474.8100

BREF 936.6800

XMRP 1109.0000

YMRP .0000

ZMRP 375.0000

SCALE .0125

SO.FT. 50. FT.

IN. 10

IN. 20

IN. 30

IN. 40

IN. 50

IN. 60

IN. 70

IN. 80

IN. 90

IN. 100

IN. 110

IN. 120

IN. 130

IN. 140

IN. 150

IN. 160

IN. 170

IN. 180

IN. 190

IN. 200

IN. 210

IN. 220

IN. 230

IN. 240

IN. 250

IN. 260

IN. 270

IN. 280

IN. 290

IN. 300

IN. 310

IN. 320

IN. 330

IN. 340

IN. 350

IN. 360

IN. 370

IN. 380

IN. 390

IN. 400

IN. 410

IN. 420

IN. 430

IN. 440

IN. 450

IN. 460

IN. 470

IN. 480

IN. 490

IN. 500

IN. 510

IN. 520

IN. 530

IN. 540

IN. 550

IN. 560

IN. 570

IN. 580

IN. 590

IN. 600

IN. 610

IN. 620

IN. 630

IN. 640

IN. 650

IN. 660

IN. 670

IN. 680

IN. 690

IN. 700

IN. 710

IN. 720

IN. 730

IN. 740

IN. 750

IN. 760

IN. 770

IN. 780

IN. 790

IN. 800

IN. 810

IN. 820

IN. 830

IN. 840

IN. 850

IN. 860

IN. 870

IN. 880

IN. 890

IN. 900

IN. 910

IN. 920

IN. 930

IN. 940

IN. 950

IN. 960

IN. 970

IN. 980

IN. 990

IN. 1000

IN. 1010

IN. 1020

IN. 1030

IN. 1040

IN. 1050

IN. 1060

IN. 1070

IN. 1080

IN. 1090

IN. 1100

IN. 1110

IN. 1120

IN. 1130

IN. 1140

IN. 1150

IN. 1160

IN. 1170

IN. 1180

IN. 1190

IN. 1200

IN. 1210

IN. 1220

IN. 1230

IN. 1240

IN. 1250

IN. 1260

IN. 1270

IN. 1280

IN. 1290

IN. 1300

IN. 1310

IN. 1320

IN. 1330

IN. 1340

IN. 1350

IN. 1360

IN. 1370

IN. 1380

IN. 1390

IN. 1400

IN. 1410

IN. 1420

IN. 1430

IN. 1440

IN. 1450

IN. 1460

IN. 1470

IN. 1480

IN. 1490

IN. 1500

IN. 1510

IN. 1520

IN. 1530

IN. 1540

IN. 1550

IN. 1560

IN. 1570

IN. 1580

IN. 1590

IN. 1600

IN. 1610

IN. 1620

IN. 1630

IN. 1640

IN. 1650

IN. 1660

IN. 1670

IN. 1680

IN. 1690

IN. 1700

IN. 1710

IN. 1720

IN. 1730

IN. 1740

IN. 1750

IN. 1760

IN. 1770

IN. 1780

IN. 1790

IN. 1800

IN. 1810

IN. 1820

IN. 1830

IN. 1840

IN. 1850

IN. 1860

IN. 1870

IN. 1880

IN. 1890

IN. 1900

IN. 1910

IN. 1920

IN. 1930

IN. 1940

IN. 1950

IN. 1960

IN. 1970

IN. 1980

IN. 1990

IN. 2000

IN. 2010

IN. 2020

IN. 2030

IN. 2040

IN. 2050

IN. 2060

IN. 2070

IN. 2080

IN. 2090

IN. 2100

IN. 2110

IN. 2120

IN. 2130

IN. 2140

IN. 2150

IN. 2160

IN. 2170

IN. 2180

IN. 2190

IN. 2200

IN. 2210

IN. 2220

IN. 2230

IN. 2240

IN. 2250

IN. 2260

IN. 2270

IN. 2280

IN. 2290

IN. 2300

IN. 2310

IN. 2320

IN. 2330

IN. 2340

IN. 2350

IN. 2360

IN. 2370

IN. 2380

IN. 2390

IN. 2400

IN. 2410

IN. 2420

IN. 2430

IN. 2440

IN. 2450

IN. 2460

IN. 2470

IN. 2480

IN. 2490

IN. 2500

IN. 2510

IN. 2520

IN. 2530

IN. 2540

IN. 2550

IN. 2560

IN. 2570

IN. 2580

IN. 2590

IN. 2600

IN. 2610

IN. 2620

IN. 2630

IN. 2640

IN. 2650

IN. 2660

IN. 2670

IN. 2680

IN. 2690

IN. 2700

IN. 2710

IN. 2720

IN. 2730

IN. 2740

IN. 2750

IN. 2760

IN. 2770

IN. 2780

IN. 2790

IN. 2800

IN. 2810

IN. 2820

IN. 2830

IN. 2840

IN. 2850

IN. 2860

IN. 2870

IN. 2880

IN. 2890

IN. 2900

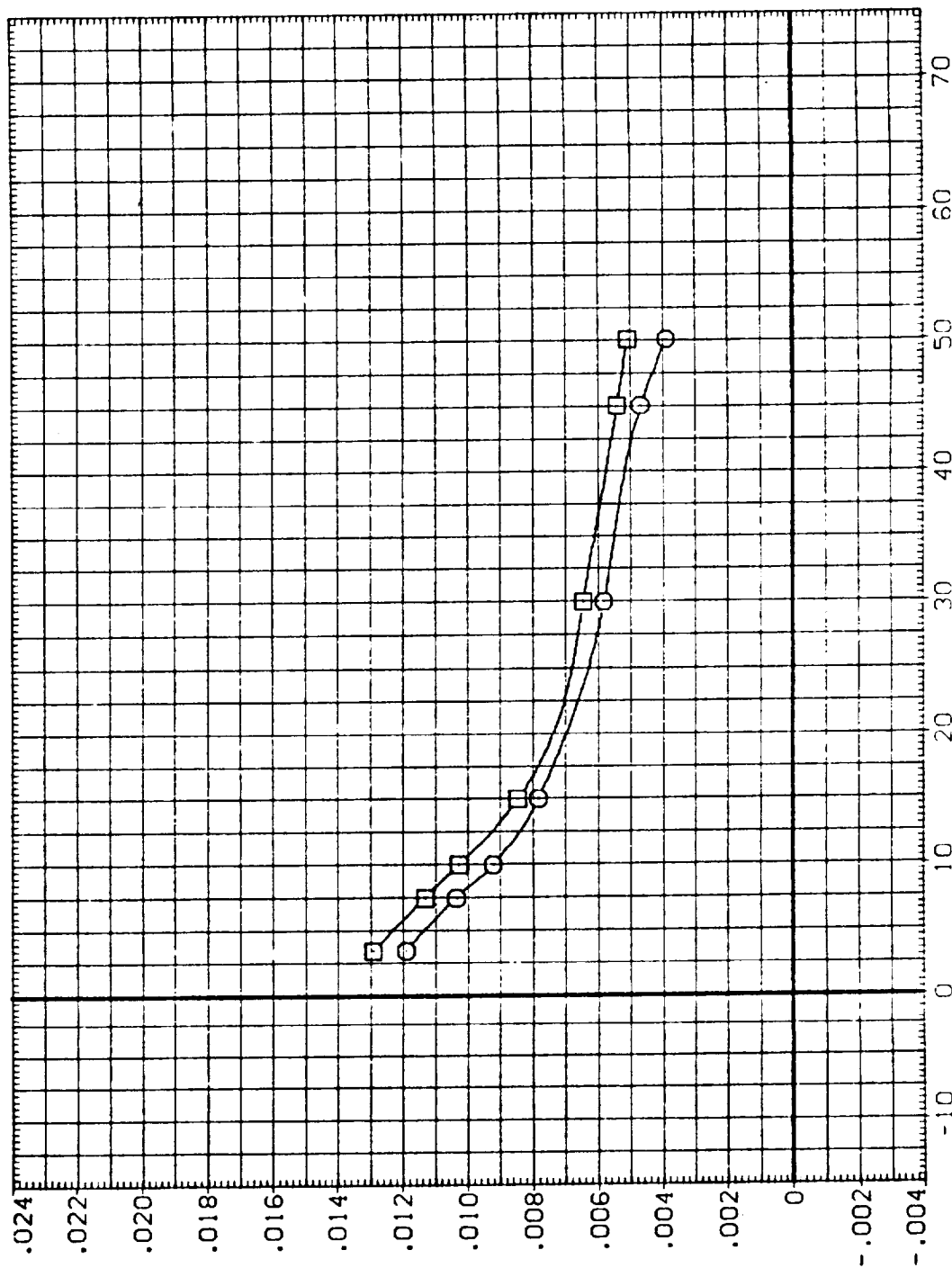
IN. 2910

IN. 2920

IN. 2930

IN. 2940

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHV10)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	.000	5.000	8.000	.600	SREF 2690.0000 SQ.FT.
(4NHV19)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	10.000	5.000	8.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XHRP 1109.0000 IN. XC
						YHRP .0000 IN. YC
						ZHRP 375.0000 IN. ZC
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 23 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C OFF, IORB=8.0 DEG)

DATA SET SYMBOL  
(4NHV10)  
(4NHV19)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

ORBITER DATA  
DY 10.000  
ELEVON 5.000  
10RB 8.000  
MACH .600

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

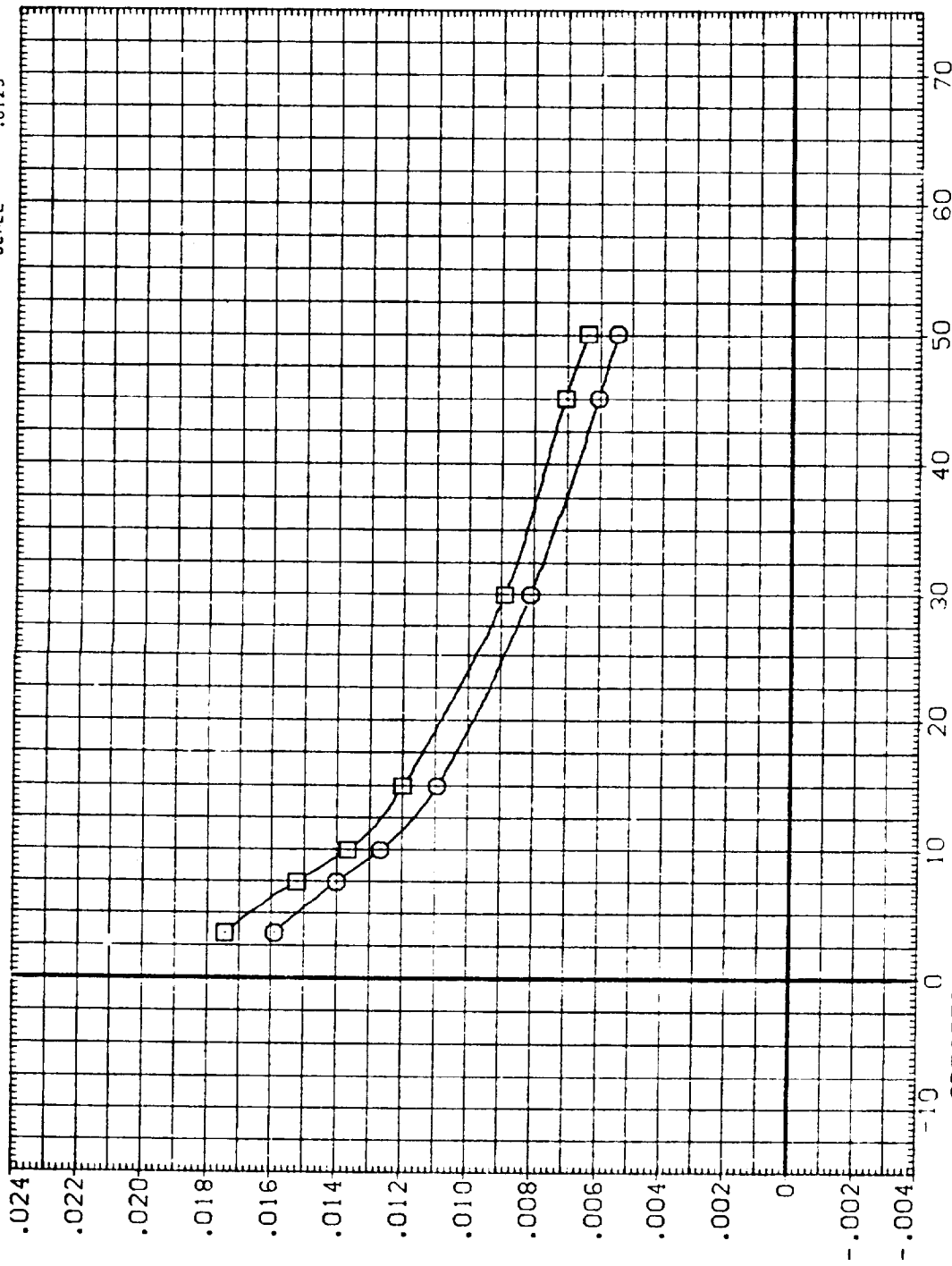


FIG. 23 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C OFF,10RB=8.0 DEG)  
(B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH011)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.800	-1.000	BREF 2348.0400 IN.
(PNH008)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	XMRP 1339.9000 IN.
(PNH025)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN.
(PNH009)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	ZMRP 190.7500 IN.
						SCALE .0125

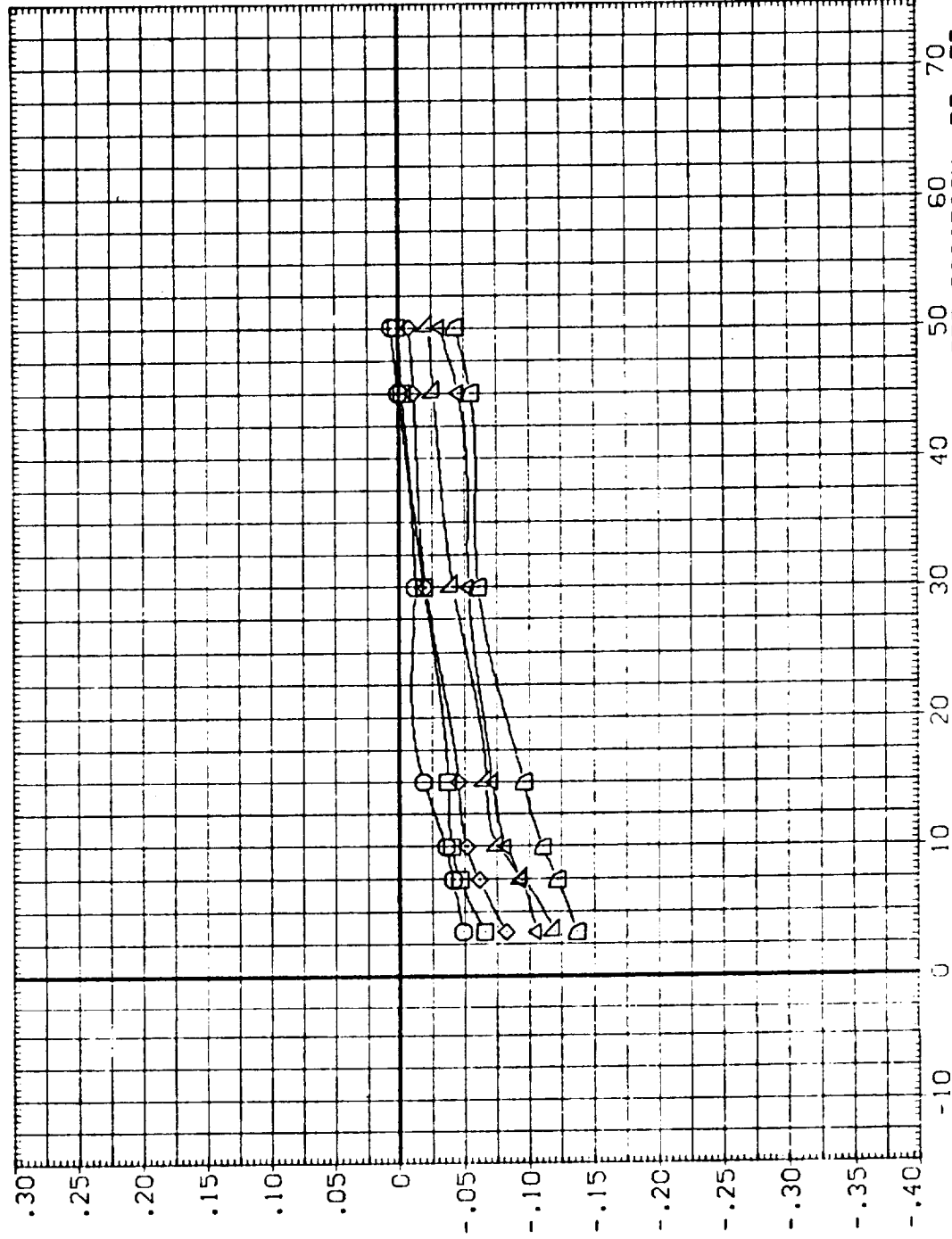


FIG. 24 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5503.0000 SQ. FT.
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	4.000	5.000	.600	-1.000	UREF 327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	-1.000	XMRP 1339.5000 IN.
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN.
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	8.000	5.000	.600	-1.000	ZMRP 190.7500 IN.
						SCALE .0125

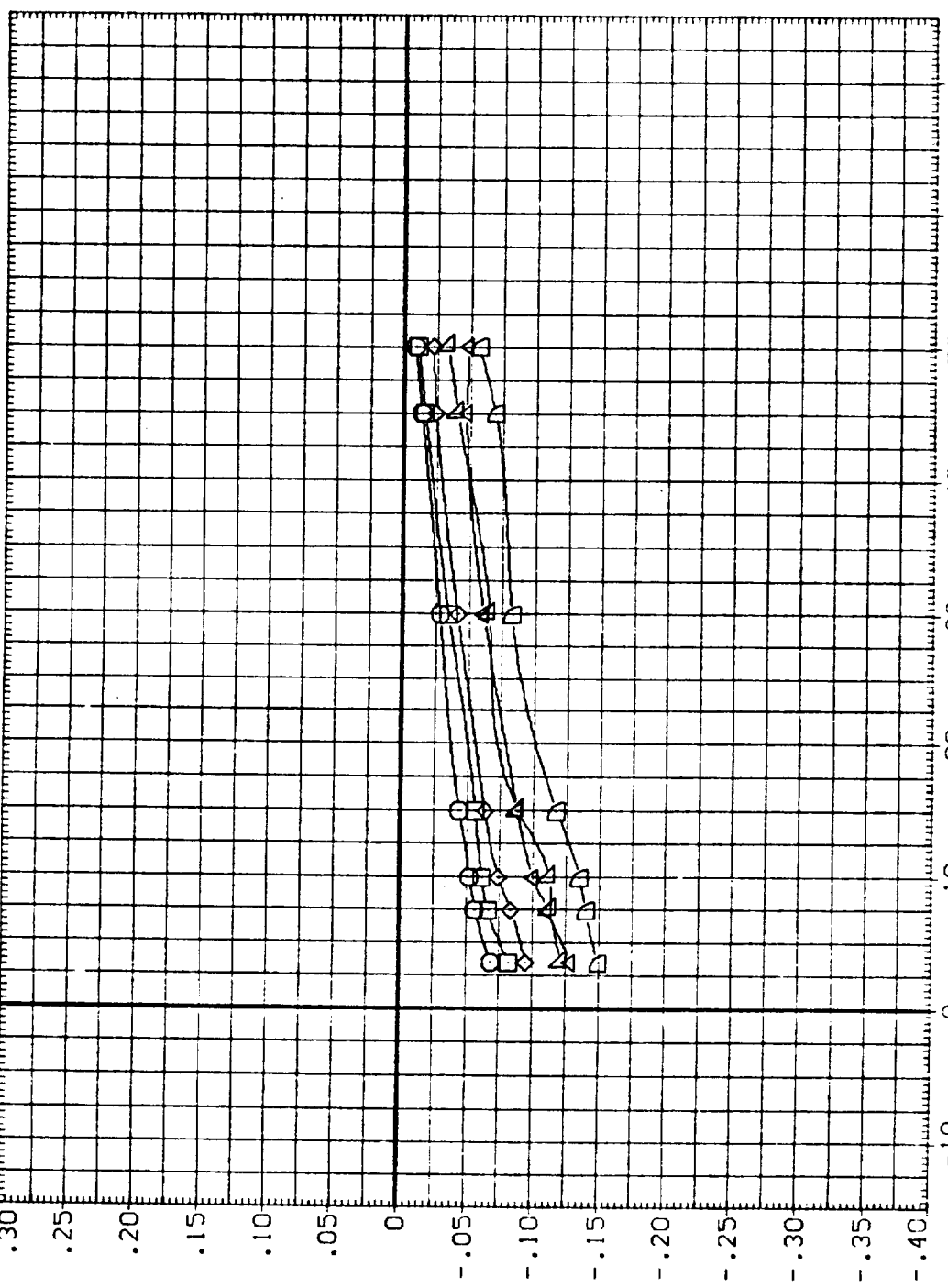
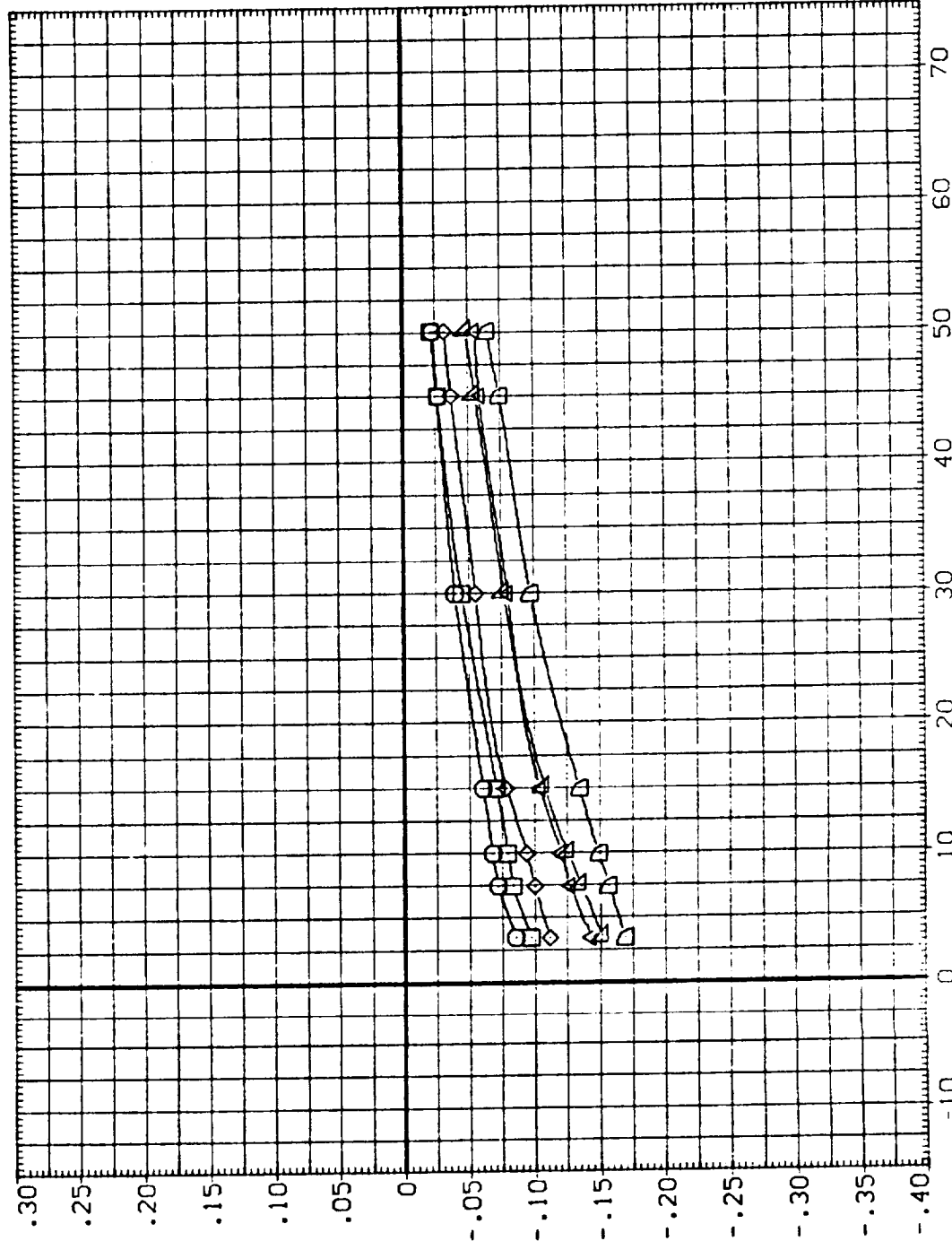


FIG. 24 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)  
 (B)ALPHAC= 2.00  
 PAGE 176

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	YMRP 1339.9000 IN.
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN.
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	ZMRP 190.7500 IN.
						SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 24 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORPB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SO.FT.
(PNH011)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	5.000	.600	-1.000	LREF 327.7890 IN.
(PNH024)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH008)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	-1.000	XMRP 1339.9000 IN. XC
(PNH025)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN. YC
(PNH009)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	5.000	.600	-1.000	ZMRP 190.7500 IN. ZC
						SCALE .0125

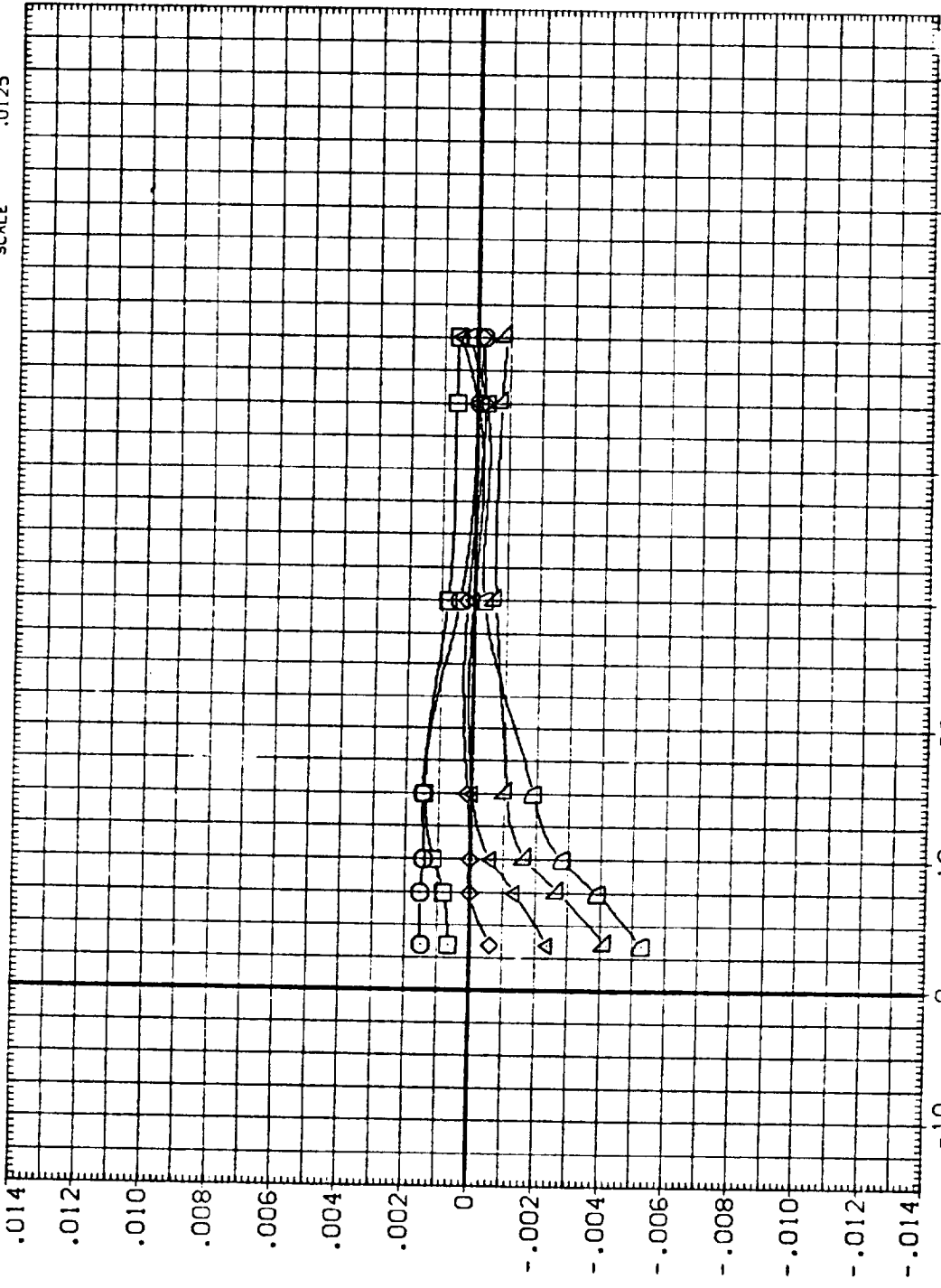


FIG. 24 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)  
 (A)ALPHAC= .00  
 ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.  
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION		
(PNH021)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF	5500.0000	50. FT.
(PNH011)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	LREF	327.7800	IN.
(PNH024)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF	2348.0400	IN.
(PNH008)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	XHRP	1339.9000	IN. XC
(PHH025)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YHRP	.0000	IN. YC
(PNH009)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	ZHRP	190.7500	IN. ZC
						SCALE	.0125	

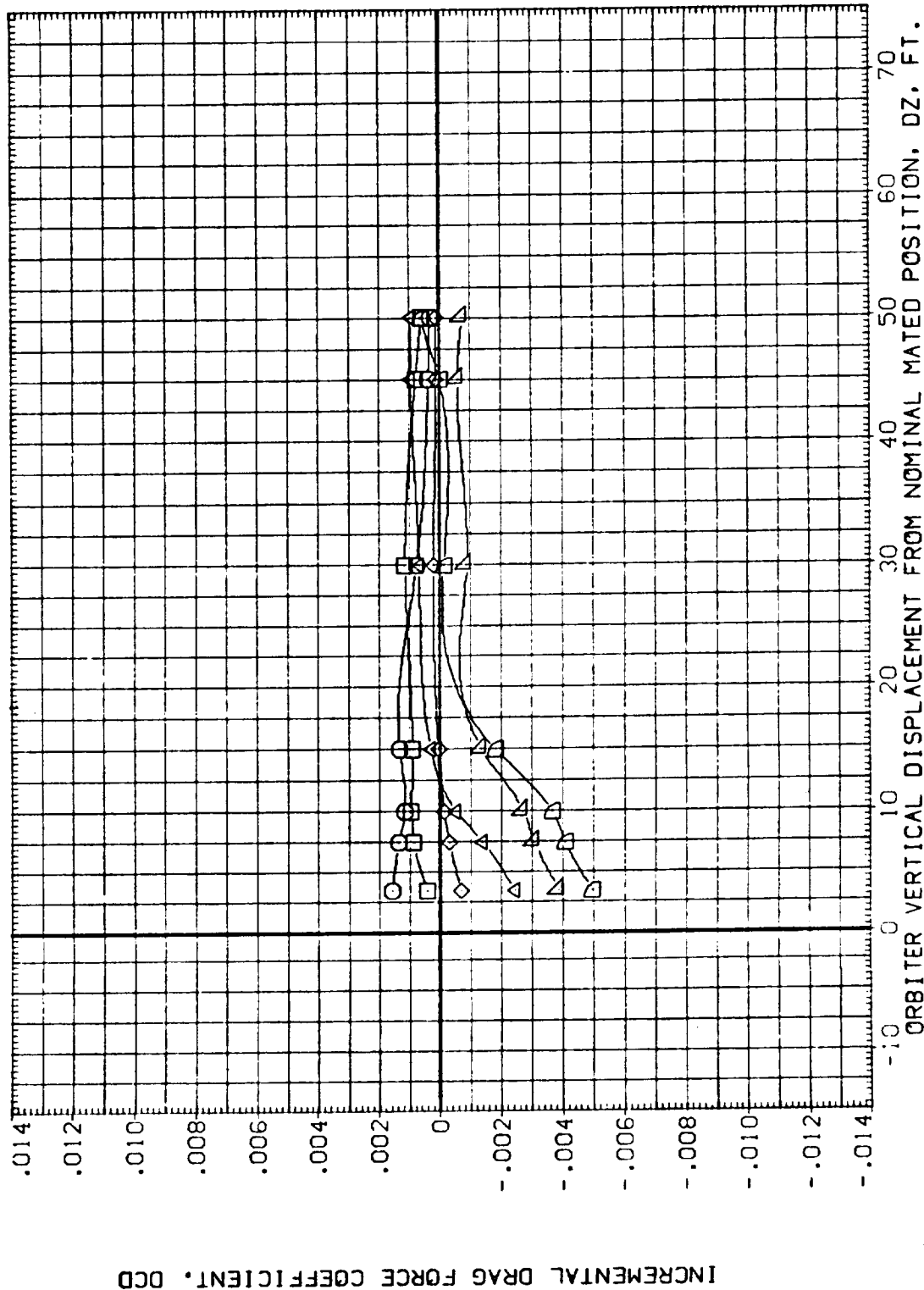


FIG. 24 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)

DATA SET SYMBOL  
(PH021)  
(PH011)  
(PH024)  
(PH008)  
(PH025)  
(PH009)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

IO RB ELEVON MACH STAB REFERENCE INFORMATION  
4.000 .000 .600 -1.000 SREF 5500.0000 50. FT.  
4.000 5.000 .600 -1.000 LREF 327.7800 IN.  
6.000 .000 .600 -1.000 BREF 2348.0400 IN.  
8.000 5.000 .600 -1.000 XMRP 1339.9000 IN. KC  
8.000 .000 .600 -1.000 YMRP .0000 IN. KC  
8.000 5.000 .600 -1.000 ZMRP 190.7500 IN. ZC  
SCALE .0125

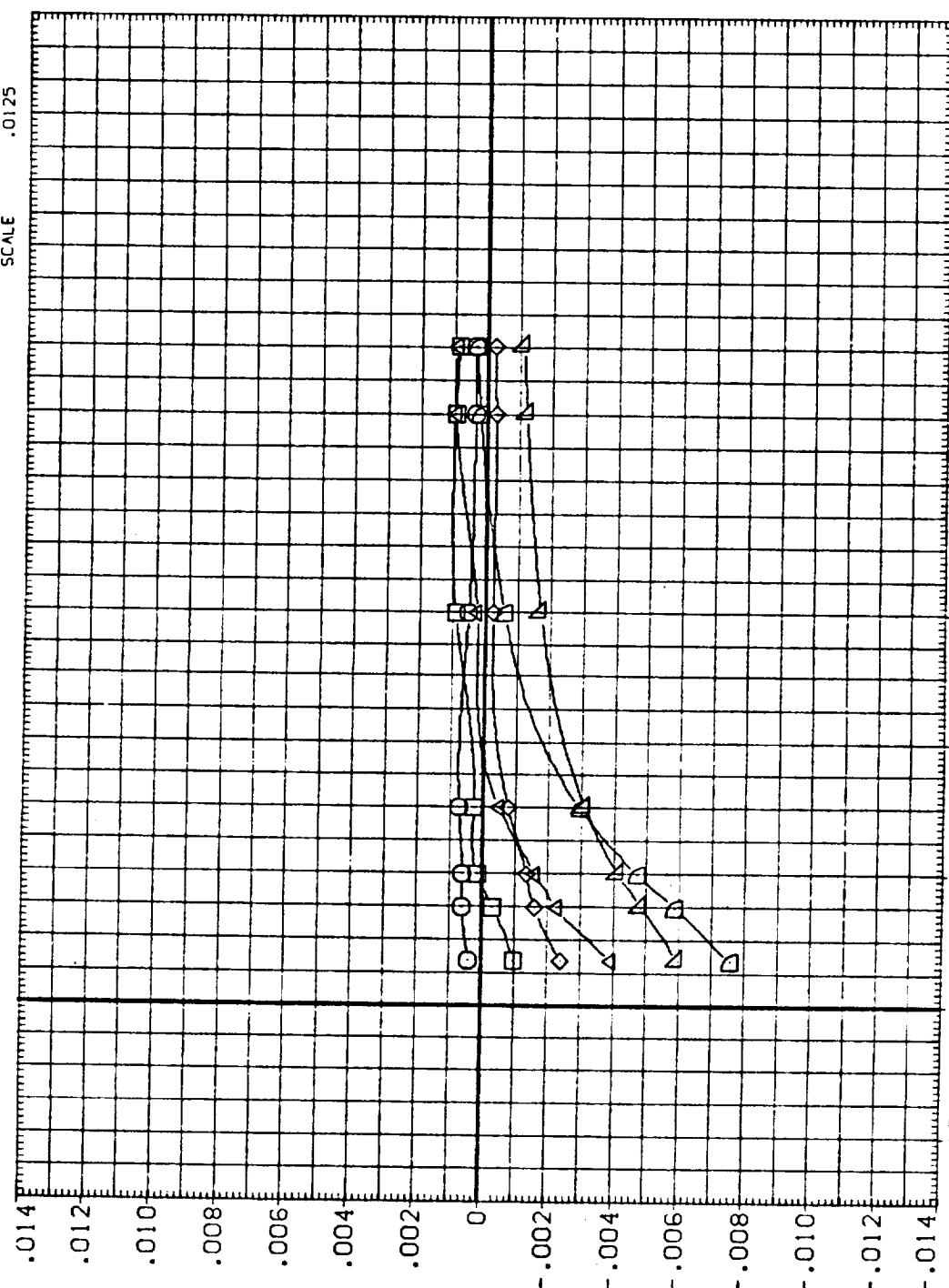


FIG. 24 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)  
(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH011)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	4.000	5.000	.600	-1.000	LREF 377.7800 IN.
(PNH024)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH008)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	6.000	5.000	.600	-1.000	XMRP 1339.5000 IN. XC
(PNH025)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP 190.7500 IN. YC
(PNH009)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	8.000	5.000	.600	-1.000	SCALE .0125

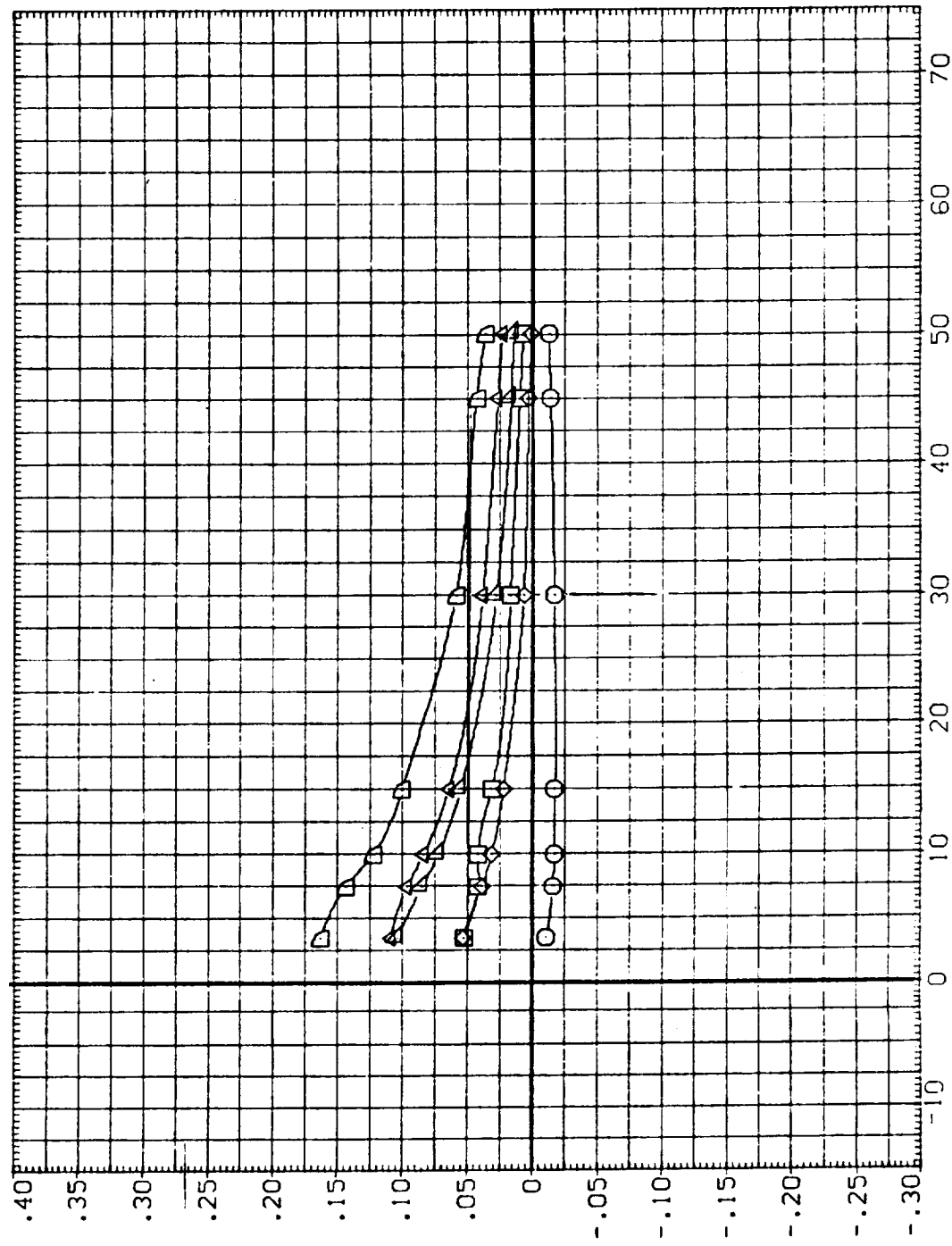
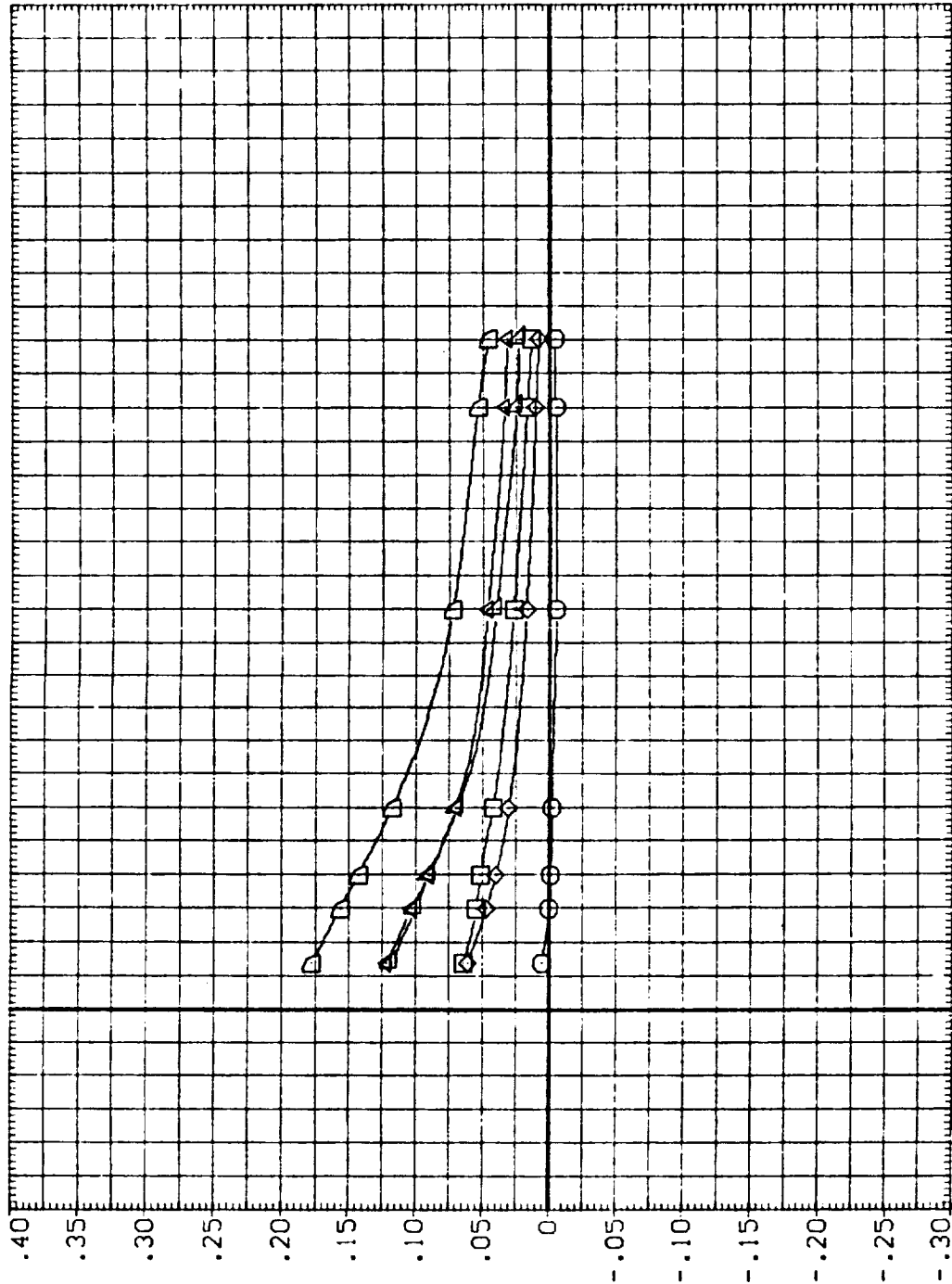


FIG. 24 EFFECT OF ORBITER ELEVONS ON CARRIER STAB=-1.0 DEG., ORB T/C OFF)

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ. FT.
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	LREF 227.7803 N.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 N.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	XMRP 1339.5000 N.
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP 190.7500 N.
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	ZMRP 190.7500 N.
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 24 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)

(B)ALPHAC= 2.00





INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL  
 (4NHQ21)  
 (4NHQ11)  
 (4NHQ24)  
 (4NHQ08)  
 (4NHQ25)  
 (4NHQ09)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)  
 ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)  
 ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)  
 ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)  
 ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)

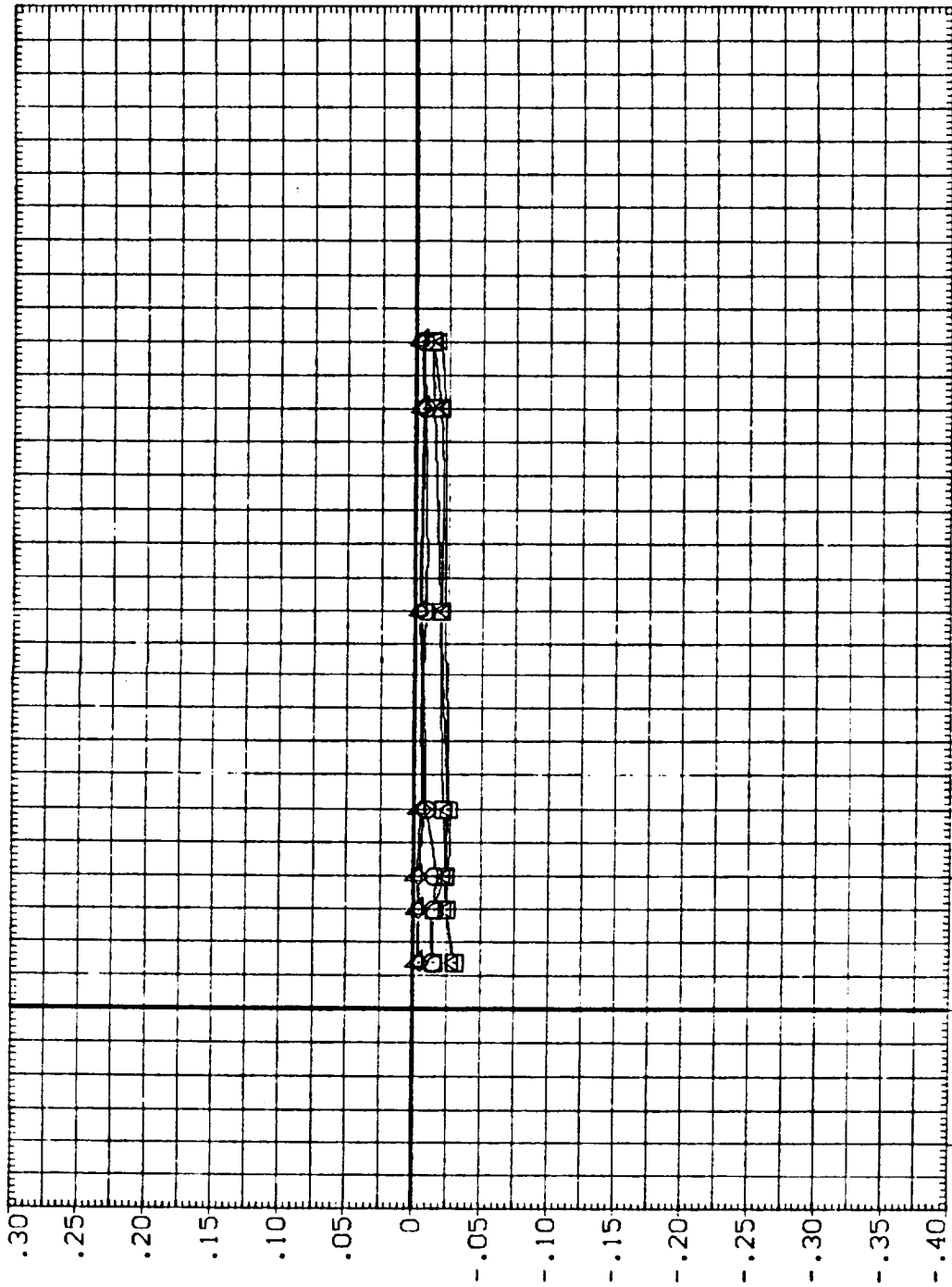
ORBITER  
 4.000  
 4.000  
 4.000  
 6.000  
 8.000

ELEVON  
 .000  
 5.000  
 5.000  
 5.000  
 5.000

MACH  
 .600  
 .600  
 .600  
 .600  
 .600

STAB  
 -1.000  
 -1.000  
 -1.000  
 -1.000  
 -1.000

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN.  
 YMRP .0000 IN.  
 ZMRP 375.0000 IN.  
 SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.  
 FIG. 25 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)  
 (A)ALPHAC= .00  
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4N-021)	ARC 14-120(CA23B) 747/1 AT1 Q251 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 50.FT.
(4N-011)	ARC 14-120(CA23B) 747/1 AT1 Q251 (ORBITER DATA)	4.000	5.000	.600	-1.000	LREF 474.8100 IN.
(4N-024)	ARC 14-120(CA23B) 747/1 AT1 Q251 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4N-008)	ARC 14-120(CA23B) 747/1 AT1 Q251 (ORBITER DATA)	6.000	5.000	.600	-1.000	YMRP 1109.0000 IN. X0
(4N-025)	ARC 14-120(CA23B) 747/1 AT1 Q251 (ORBITER DATA)	8.000	.000	.600	-1.000	ZMRP 375.0000 IN. Y0
(4N-003)	ARC 14-120(CA23B) 747/1 AT1 Q251 (ORBITER DATA)	8.000	5.000	.600	-1.000	SCALE .0125

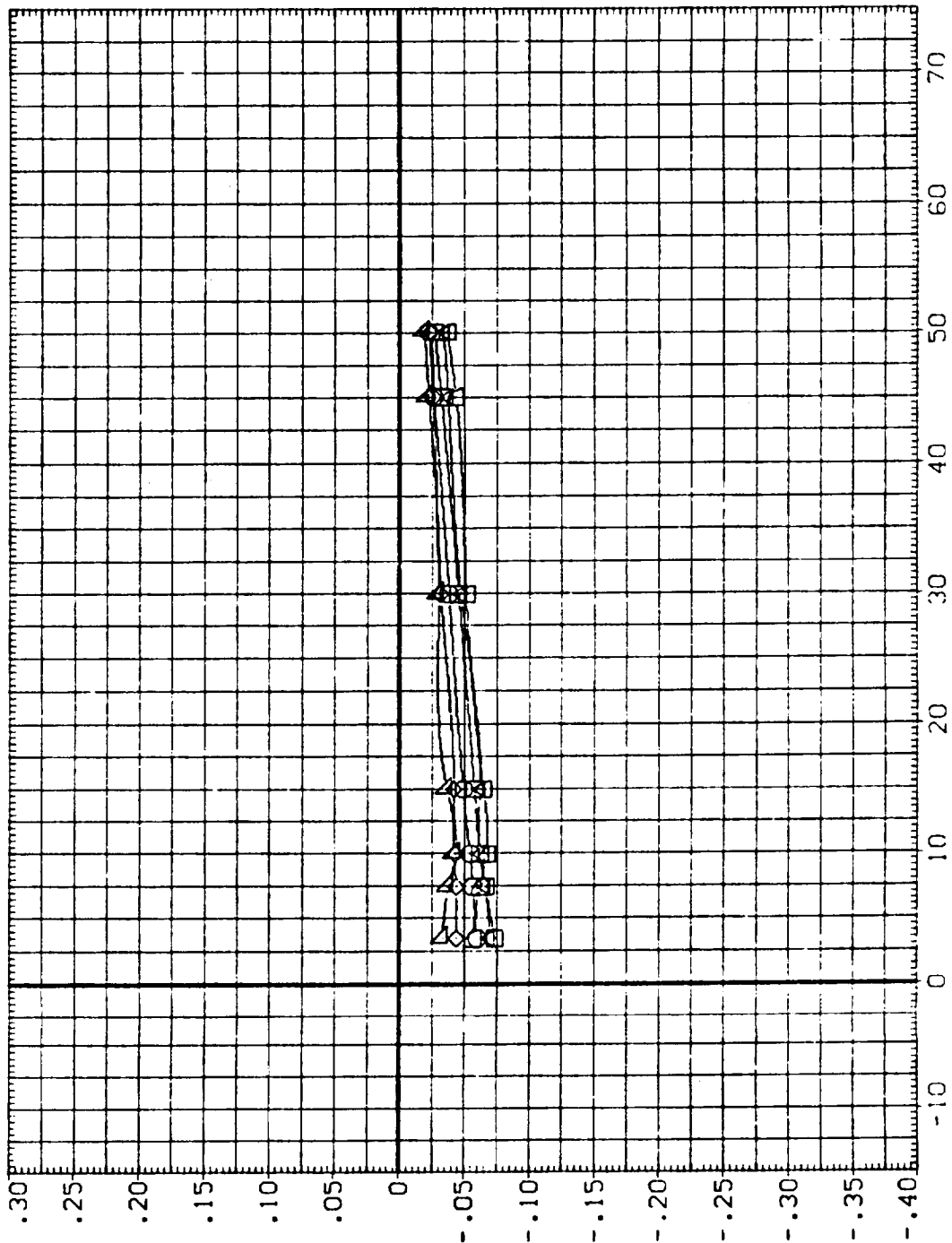


FIG. 25 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)

(B)ALPHAC= 2.00

IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
4.000	.000	.600	-1.000	SREF 2690.0000 SO. FT.
4.000	5.000	.600	-1.000	LREF 474.8100 IN.
6.000	.000	.600	-1.000	BREF 936.6800 IN.
6.000	5.000	.600	-1.000	YHRP 1109.0000 IN.
8.000	.000	.600	-1.000	YHRP 375.0000 IN.
8.000	5.000	.600	-1.000	ZHRP .0125 IN.
				SCALE

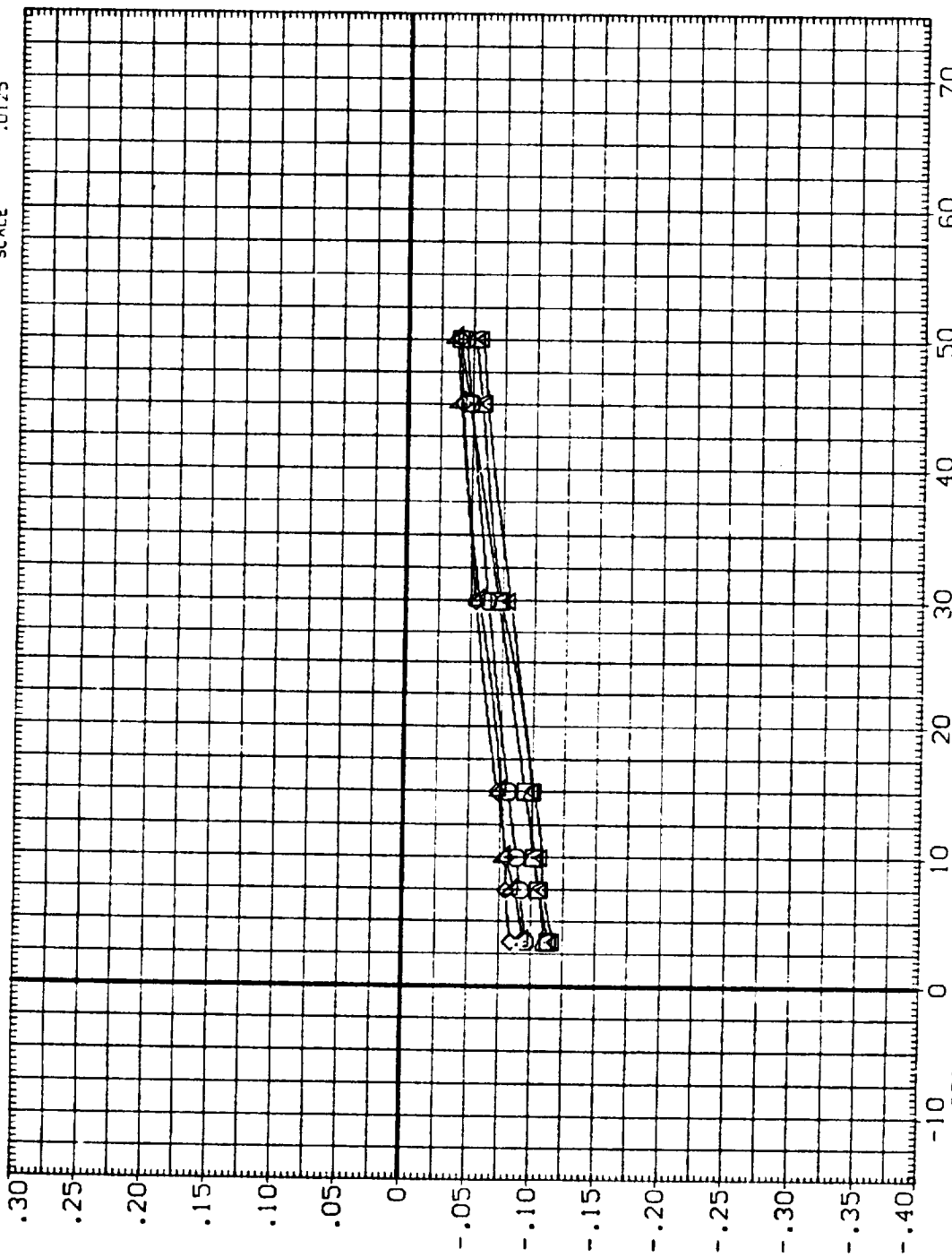


FIG. 25 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)  
(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER DATA	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH011)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	-1.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN. X0
(4NH008)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	-1.000	YMRP 1109.0000 IN. Y0
(4NH025)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	.000	.600	-1.000	ZMRP 375.0000 IN. Z0
(4NH009)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	-1.000	SCALE .0125

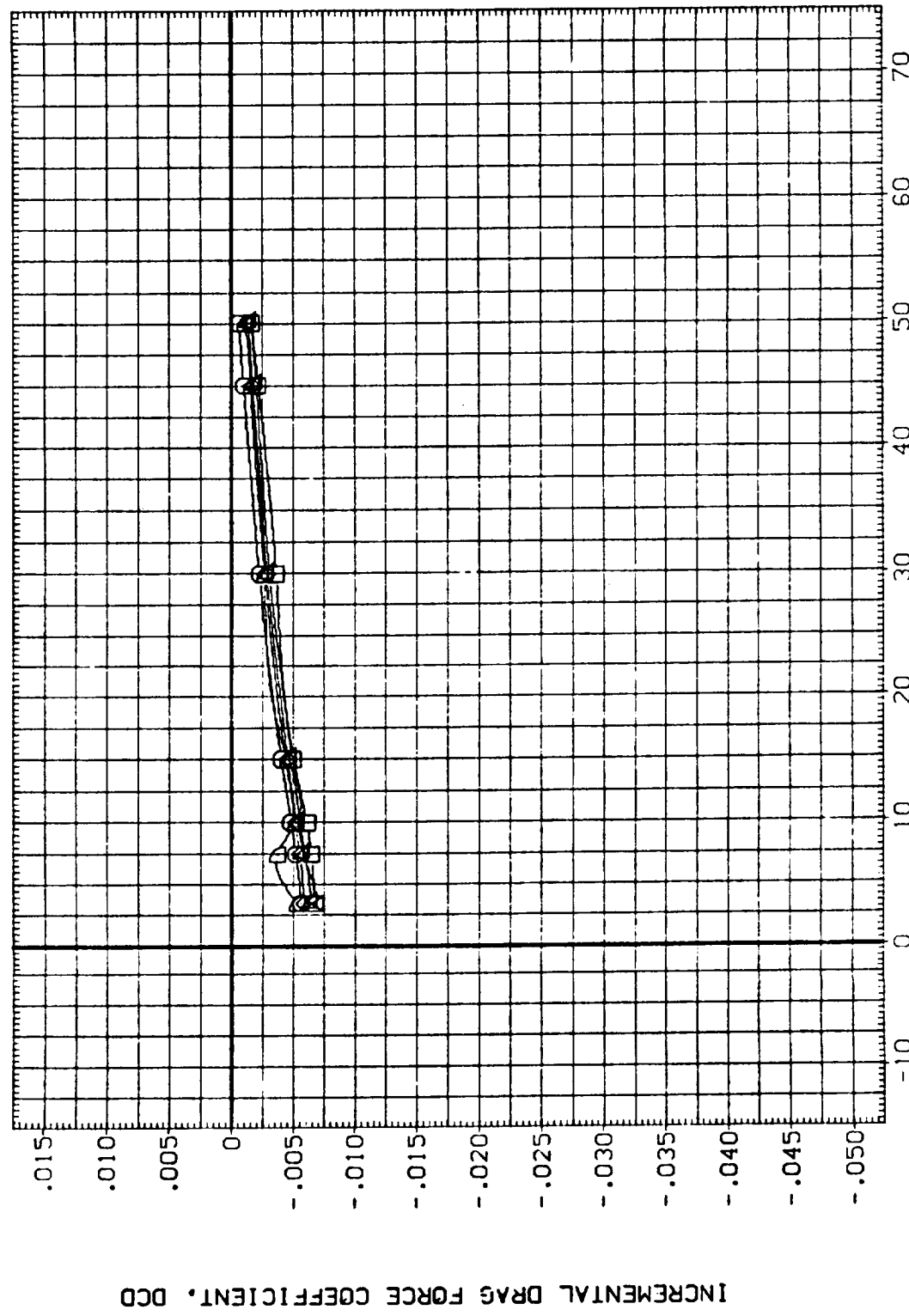


FIG. 25 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)

(A)ALPHAC= .00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 50. FT.
(4NH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	5.000	.600	-1.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	6.000	5.000	.600	-1.000	XMRP 1109.0000 IN.
(4NH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	8.000	.000	.600	-1.000	YMRP 375.0000 IN.
(4NH009)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	8.000	5.000	.600	-1.000	ZMRP 375.0000 IN.
						SCALE .0125

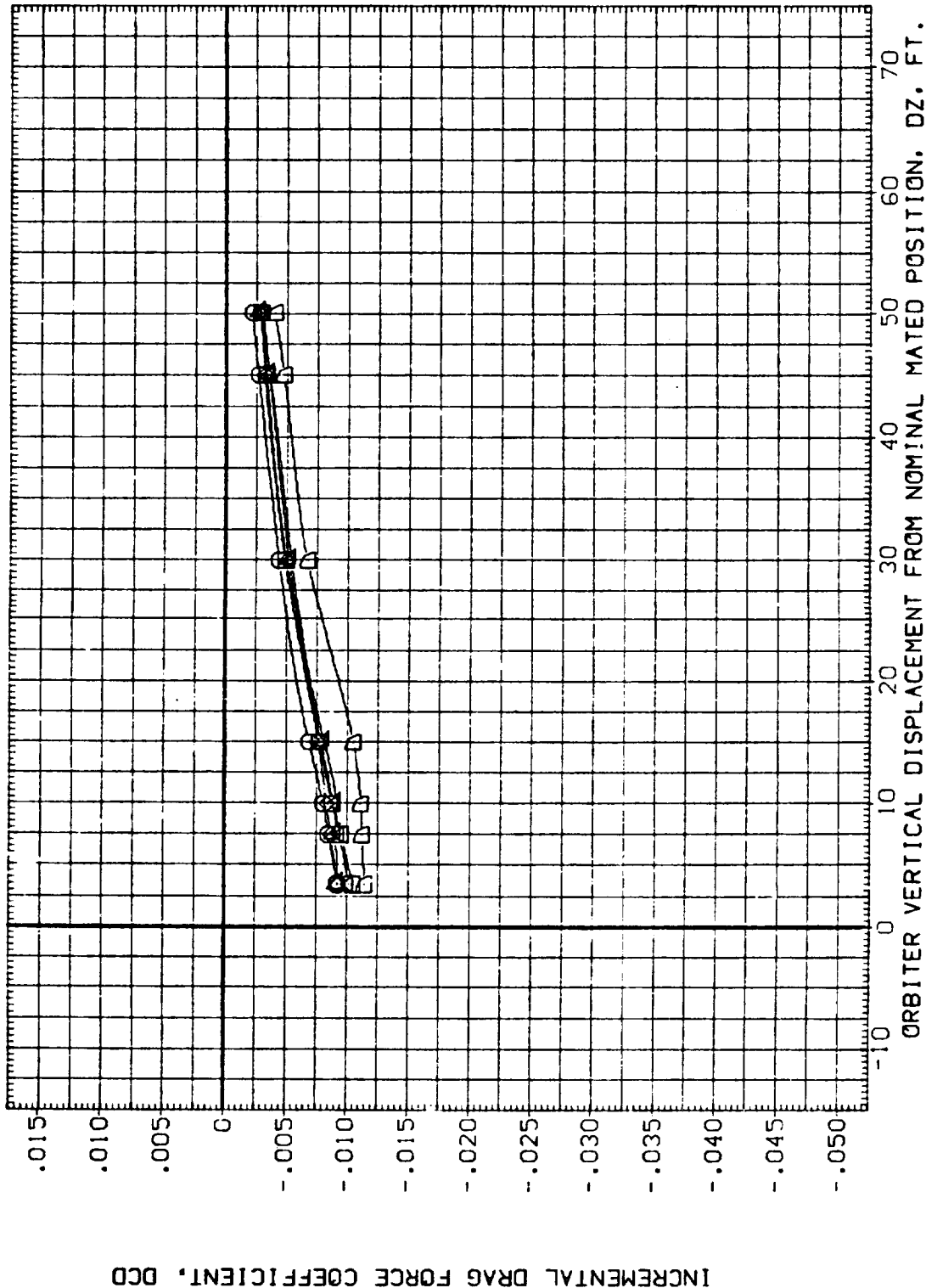


FIG. 25 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)  
(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH021)	ARC 14-120(CA238) 747/1 AT1 Q251 (ORBITER DATA)	4.000	.300	.600	-1.000	SREF	2690.0000 50. FT.
(4NH011)	ARC 14-120(CA238) 747/1 AT1 Q251 (ORBITER DATA)	4.000	5.000	.600	-1.000	LREF	474.8100 IN.
(4NH024)	ARC 14-120(CA238) 747/1 AT1 Q251 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF	936.6800 IN. XB
(4NH038)	ARC 14-120(CA238) 747/1 AT1 Q251 (ORBITER DATA)	6.000	5.000	.600	-1.000	XMRP	1109.0000 IN. XB
(4NH025)	ARC 14-120(CA238) 747/1 AT1 Q251 (ORBITER DATA)	8.000	.000	.600	-1.000	ZMRP	375.0000 IN. YB
(4NH039)	ARC 14-120(CA238) 747/1 AT1 Q251 (ORBITER DATA)	8.000	5.000	.600	-1.000	ZMRP	375.0000 IN. YB
						SCALE	.0125

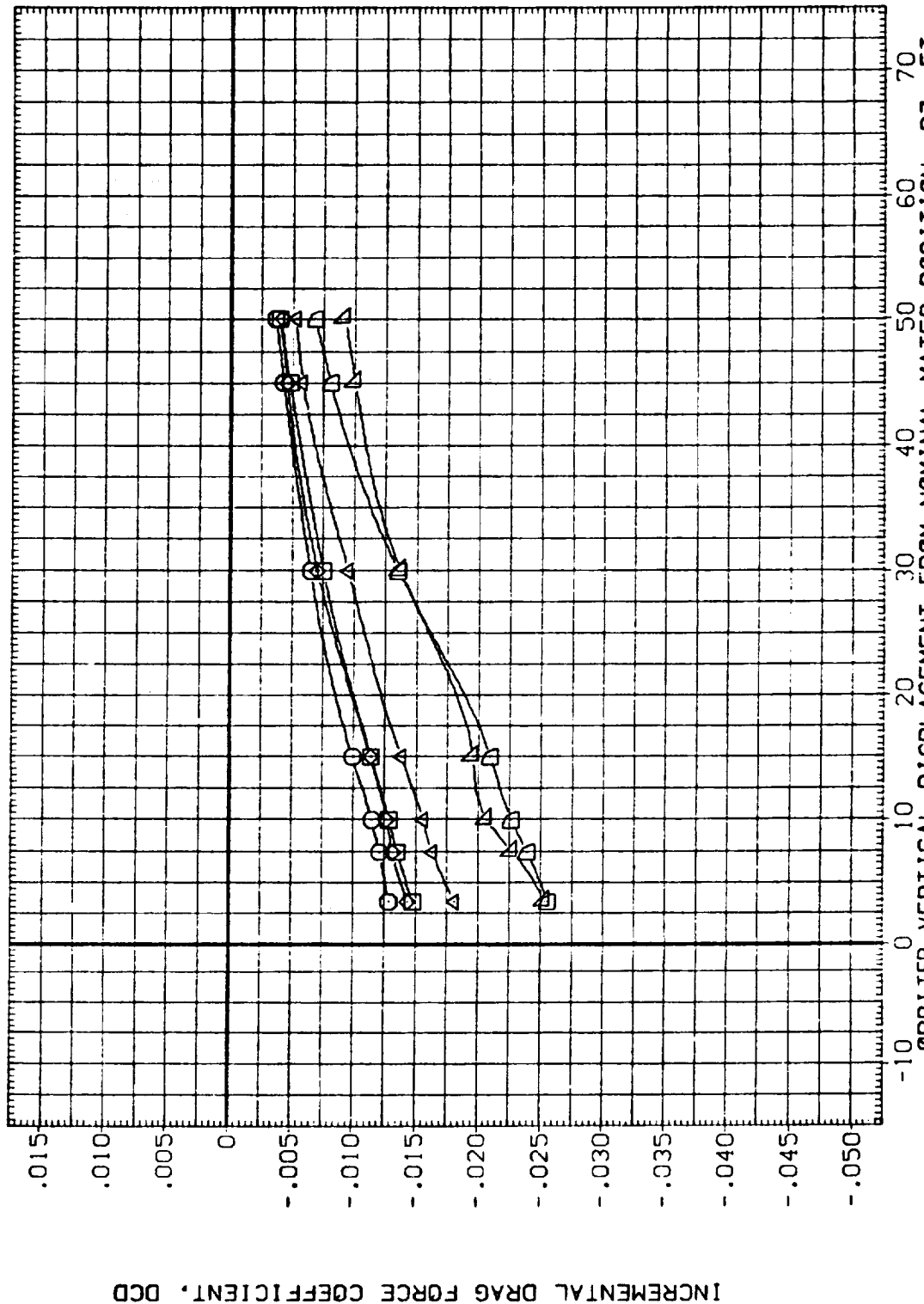


FIG. 25 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	.000	.500	-1.000	SREF 2690.0000 SQ.FT.
(4NH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	-1.000	LREF 4774.8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	-1.000	XMRP 1109.0000 IN. X0
(4NH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN. Y0
(4NH009)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	-1.000	ZMRP 375.0000 IN. Z0
						SCALE .0125

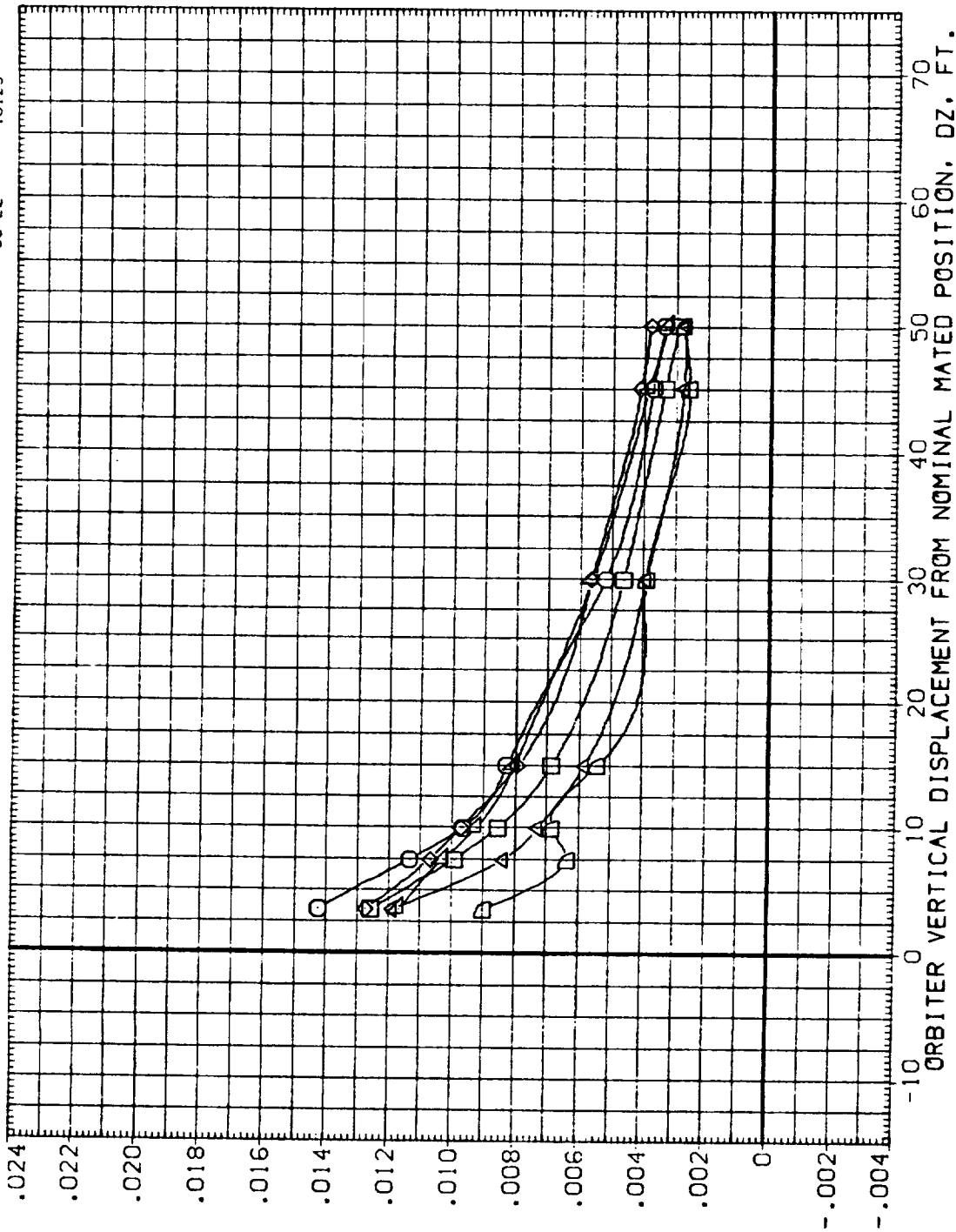


FIG. 25 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)  
(A)ALPHAC= .00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER DATA	ORBITER DATA	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA238) 747/1 AT1	0251 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH011)	ARC 14-120(CA238) 747/1 AT1	0251 (ORBITER DATA)	4.000	5.000	.600	-1.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA238) 747/1 AT1	0251 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH008)	ARC 14-120(CA238) 747/1 AT1	0251 (ORBITER DATA)	6.000	5.000	.600	-1.000	XMRP 1109.0000 IN. X0
(4NH025)	ARC 14-120(CA238) 747/1 AT1	0251 (ORBITER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN. Y0
(4NH003)	ARC 14-120(CA238) 747/1 AT1	0251 (ORBITER DATA)	8.000	5.000	.600	-1.000	ZMRP 375.0000 IN. Z0
							SCALE .0125

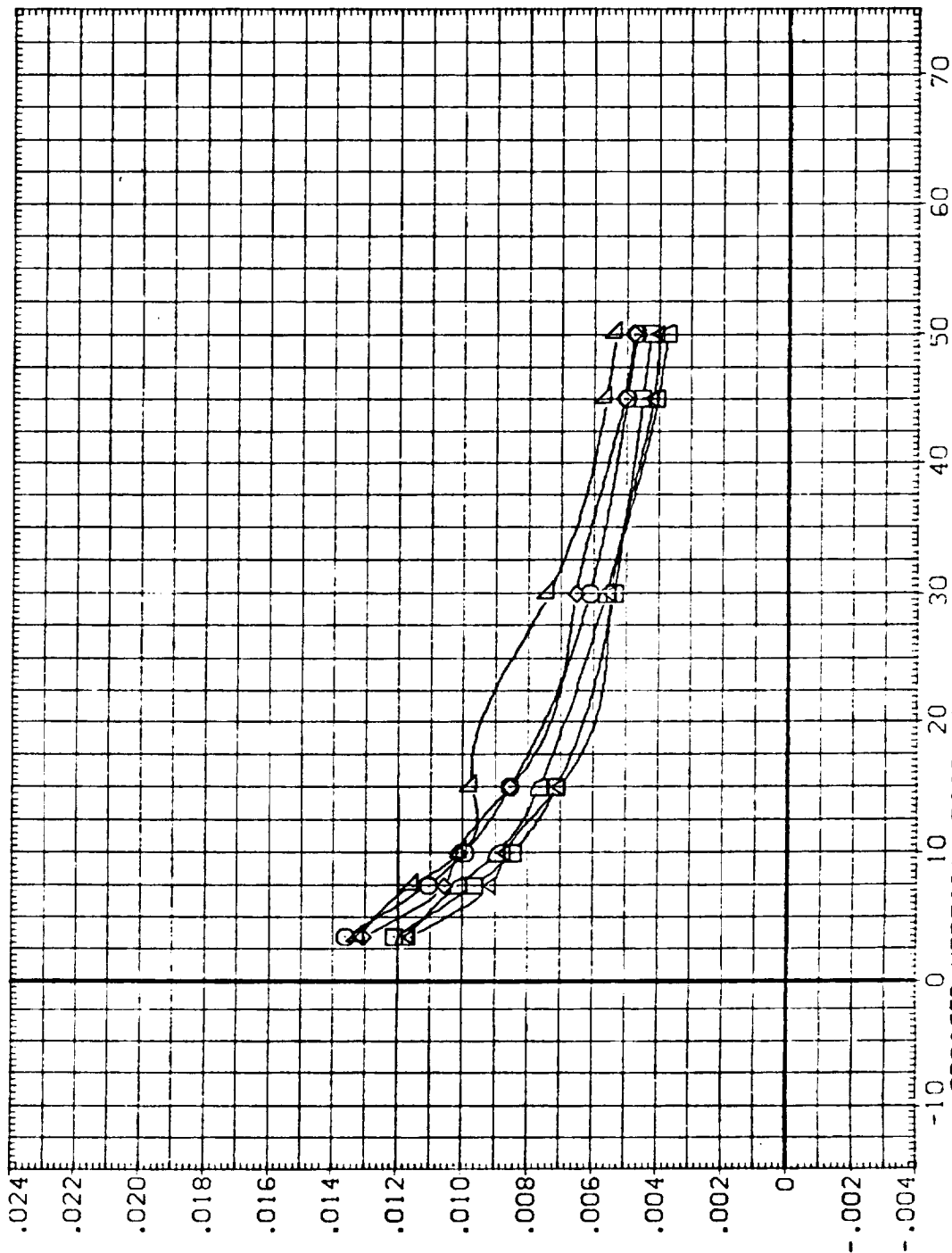


FIG. 25 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB=-1.0 DEG.,ORB T/C OFF)

ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
4.000	.000	.600	-1.000	SREF	2690.0000	SO.FT.	
4.000	.000	.600	-1.000	UREF	474.8100	IN.	
6.000	.000	.600	-1.000	BREF	936.8600	IN.	
6.000	.000	.600	-1.000	XMRP	1109.0000	IN.	X0
8.000	.000	.600	-1.000	YMRP	375.0000	IN.	Y0
8.000	.000	.600	-1.000	ZMRP	375.0000	IN.	Z0
				SCALE	.0125		



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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF	5500.0000	50. FT.	
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF	327.7800	IN.	
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	BREF	2348.0400	IN.	XC
(PNH033)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP	1339.9000	IN.	YC
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	YMRP	.0000	IN.	ZC
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	ZMRP	190.7500	IN.	ZC
						SCALE		.0125	

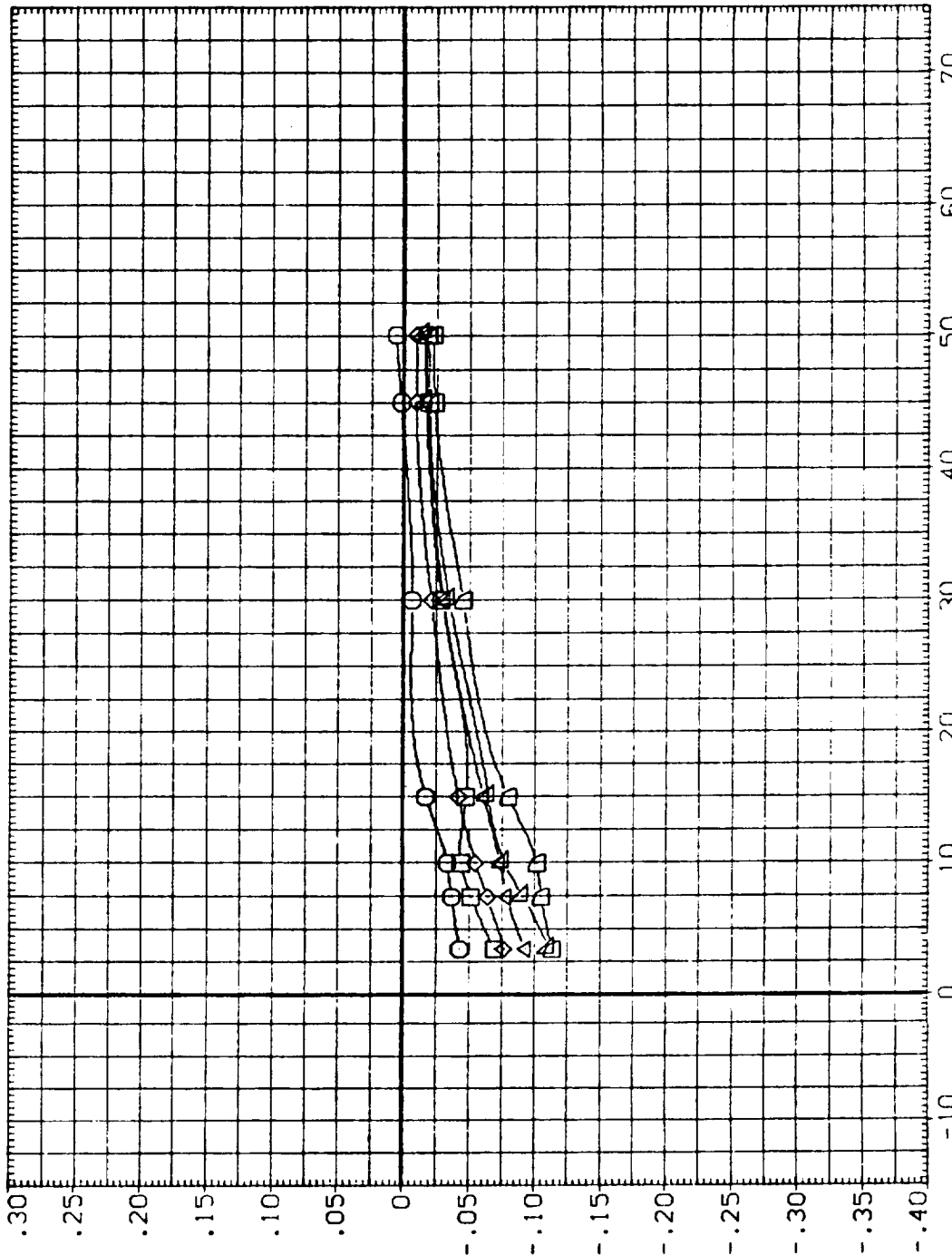


FIG. 26 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)

(A)ALPHAC= .00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 377.7800 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN.
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	YMRP .0000 IN.
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	ZMRP 190.7500 IN.
						SCALE .0125

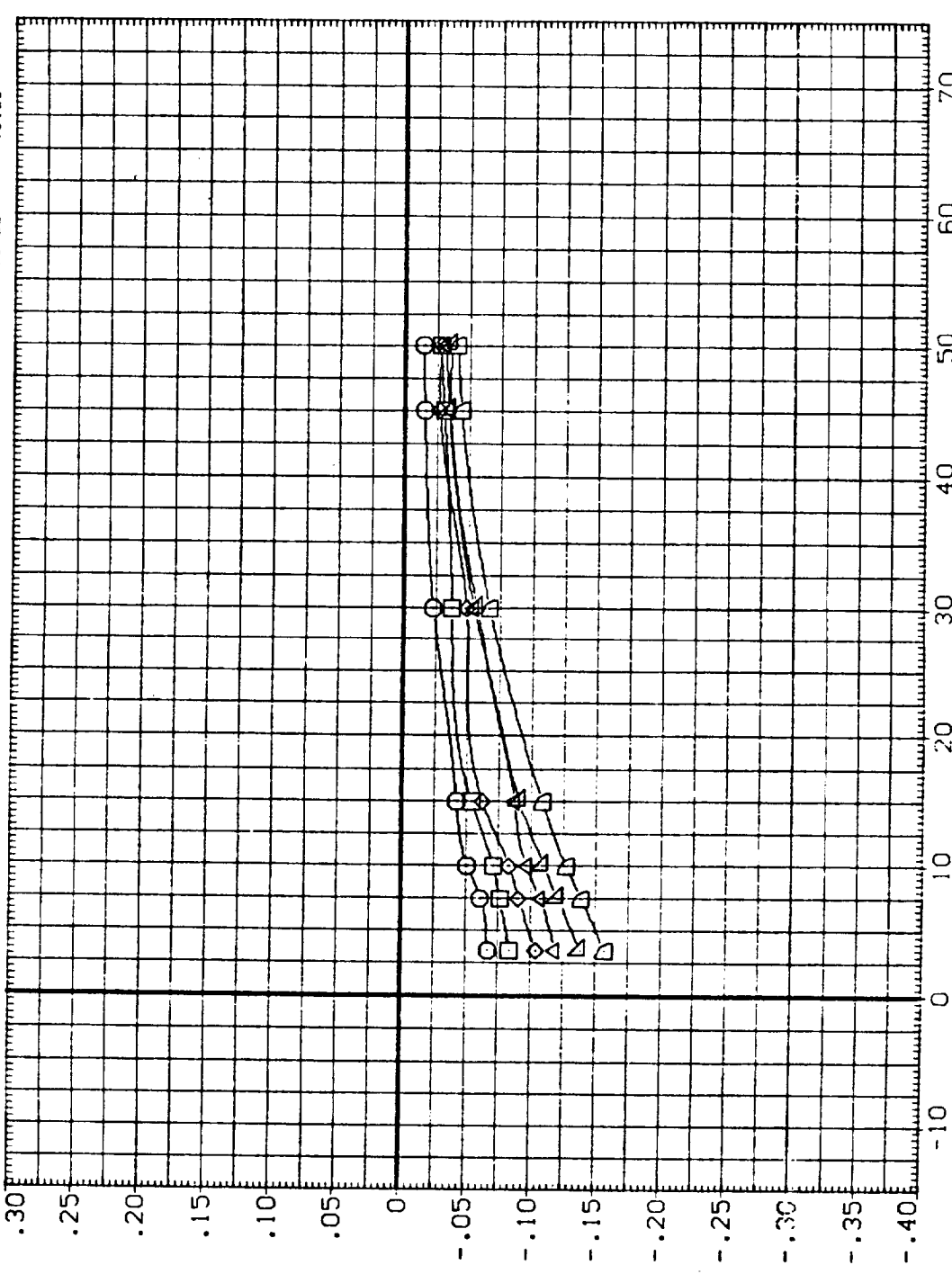


FIG. 26 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)  
 (B)ALPHA C= 2.00  
 ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.  
 PAGE 194

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVATION	MACH	STABILITY	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ. FT.
(PNH040)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN.
(PNH022)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	5.000	YMRP .0000 IN.
(PNH010)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	5.000	.600	5.000	ZMRP 190.7500 IN.
						SCALE .0125

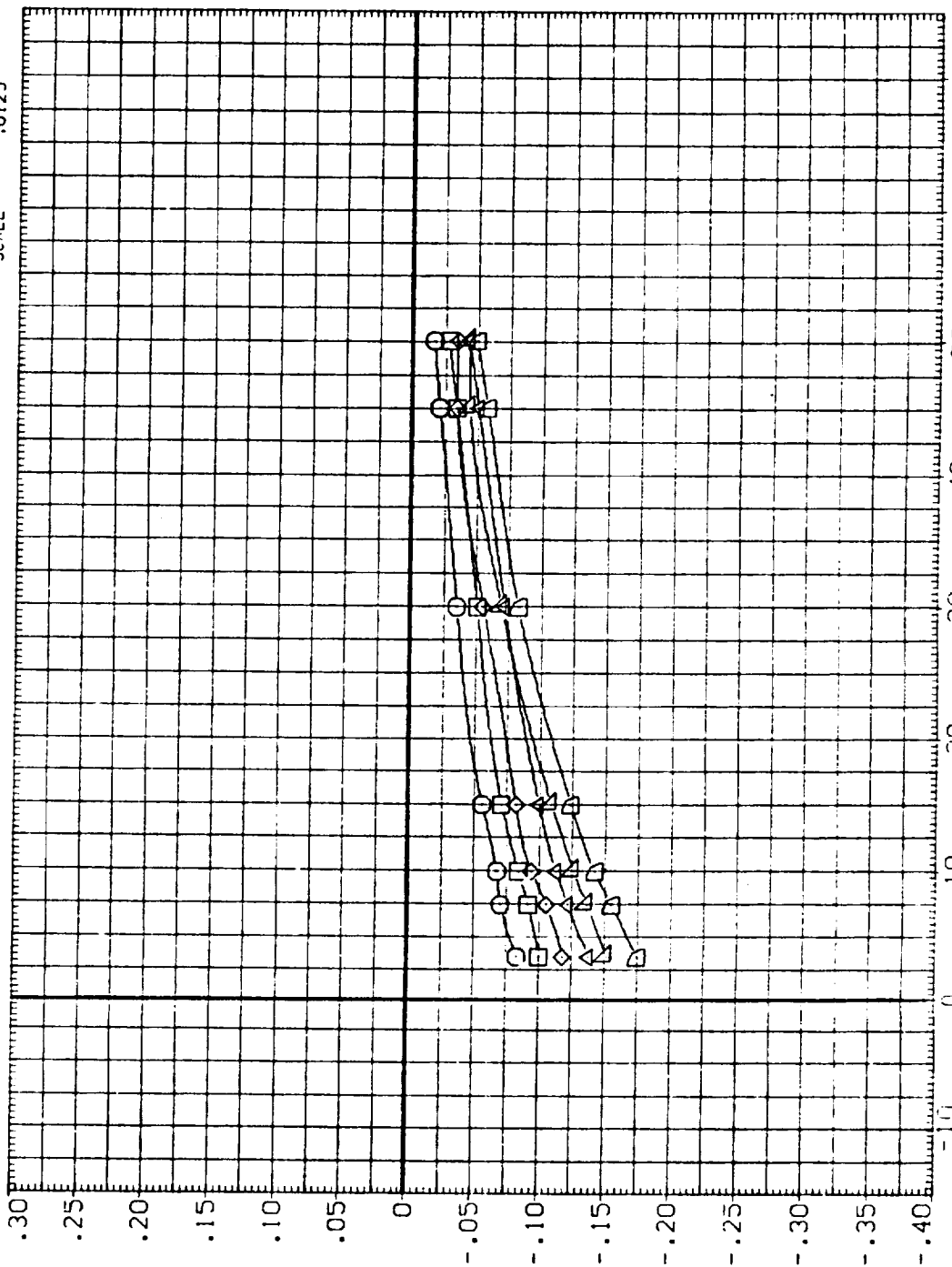


FIG. 26 EFFECT OF ORBITER ELEVATIONS ON CARRIER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)

(C)ALPHAC= 4.00

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL  
(PNH020)  
(PNH040)  
(PNH023)  
(PNH013)  
(PNH022)  
(PNH010)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)

ORBITER  
4.000  
4.000  
6.000  
8.000  
8.000

ELEVON  
.000  
5.000  
.000  
.000  
5.000

MACH  
.600  
.600  
.600  
.600  
.600

STAB  
5.000  
5.000  
5.000  
5.000  
5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN.  
YMRP .0000 IN.  
ZMRP 190.7500 IN.  
SCALE .0125

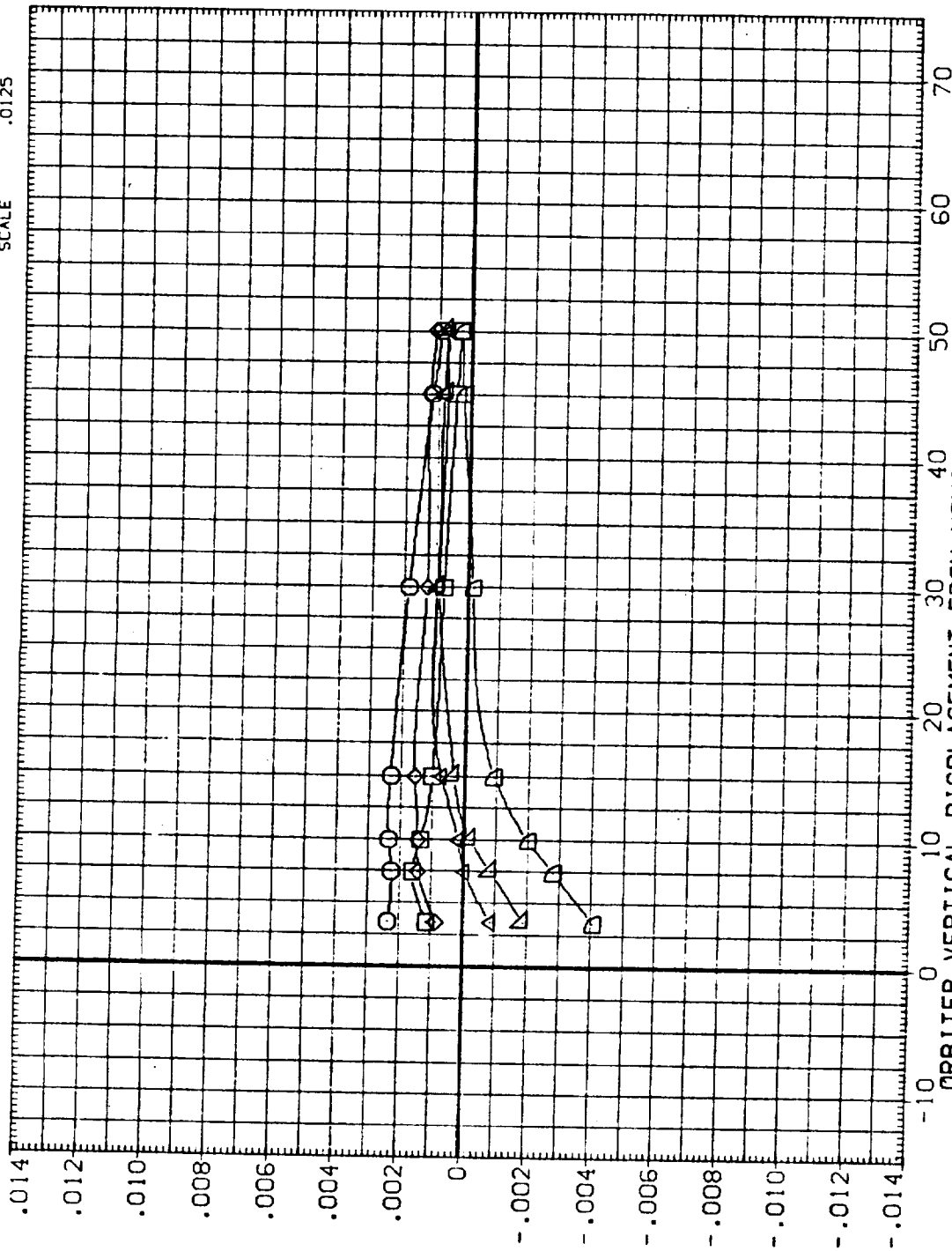


FIG. 26 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SO.FT.
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.0400 IN. XC
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	YMRP 1339.9000 IN. YC
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	ZMRP 190.7500 IN. ZC
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	SCALE .0125

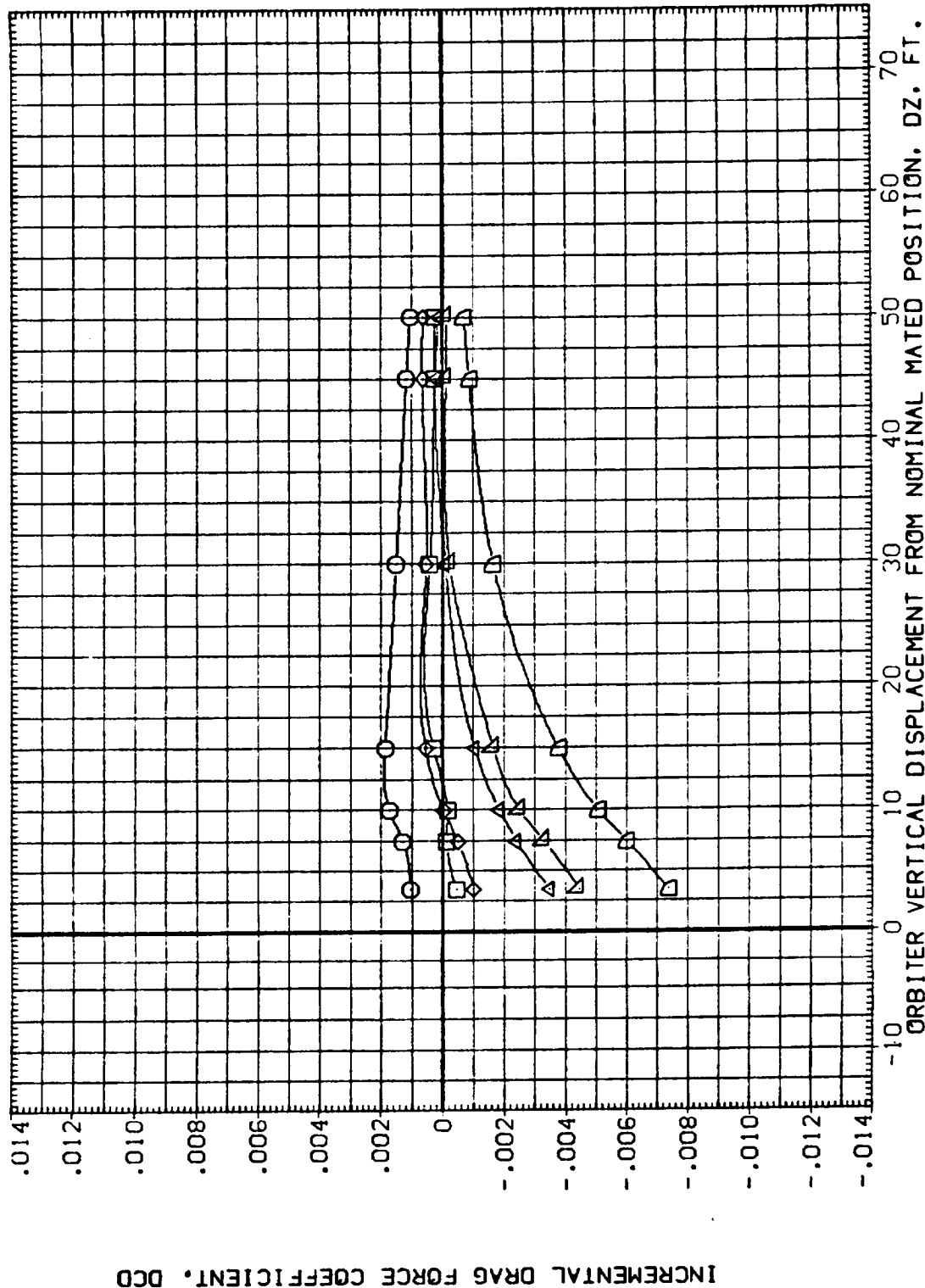


FIG. 26 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL  
(PNH020)  
(PNH040)  
(PNH023)  
(PNH013)  
(PNH022)  
(PNH010)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)

ORBITER ELEVON MACH STAB REFERENCE INFORMATION  
4.000 5.000 SREF 5500.0000 SQ.FT.  
4.000 5.000 LREF 327.7800 IN.  
6.000 5.000 BREF 2348.0400 IN.  
8.000 5.000 YMRP 1339.9000 IN.  
8.000 5.000 ZMRP 190.7500 IN.  
8.000 5.000 SCALE .0125

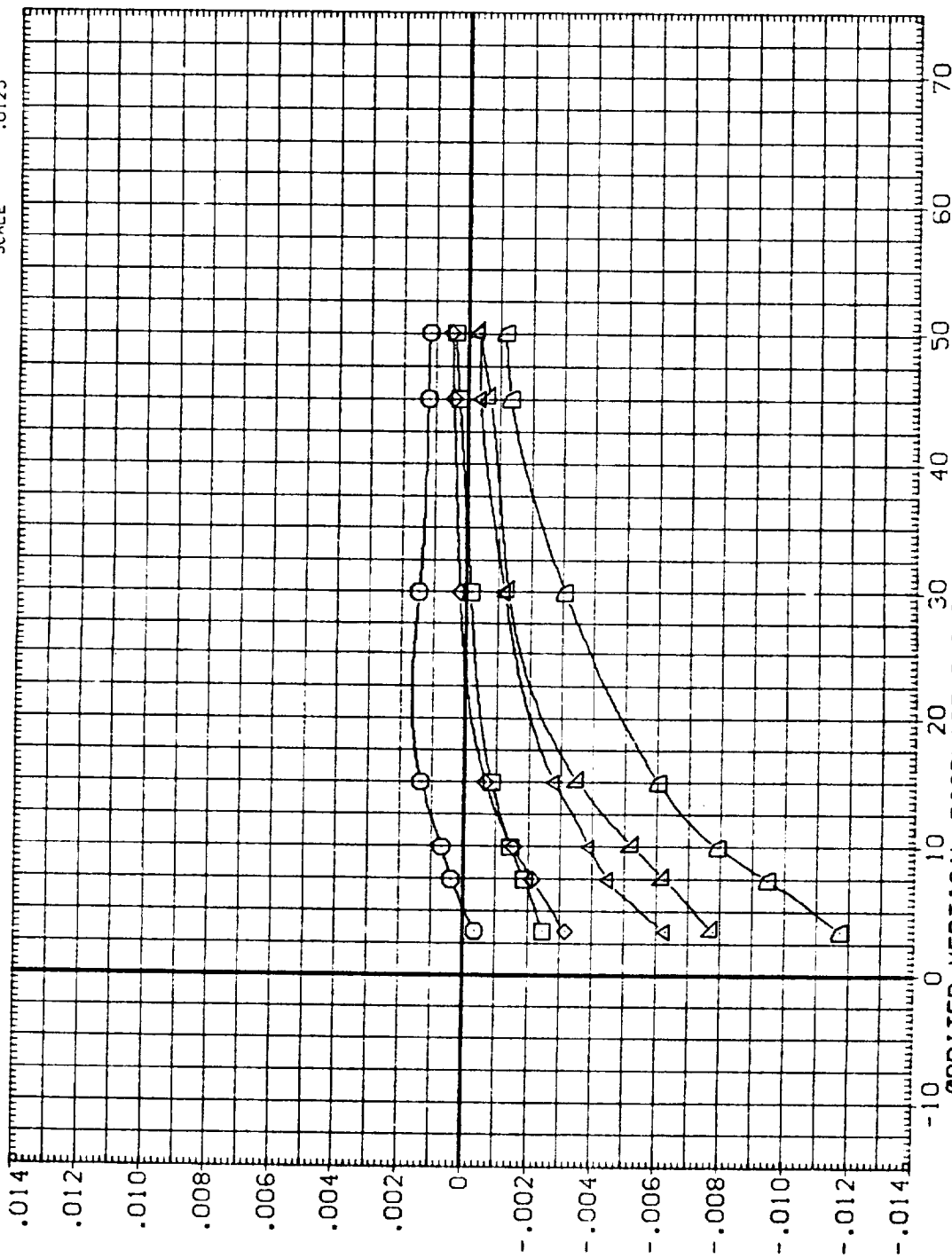


FIG. 26 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)

(C)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SO.FT.
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2349.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	5.000	.600	5.000	XHRP 1339.9000 IN.
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	.000	.600	5.000	YHRP .0000 IN.
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	5.000	.600	5.000	ZHRP 190.7500 IN.
						SCALE .0125

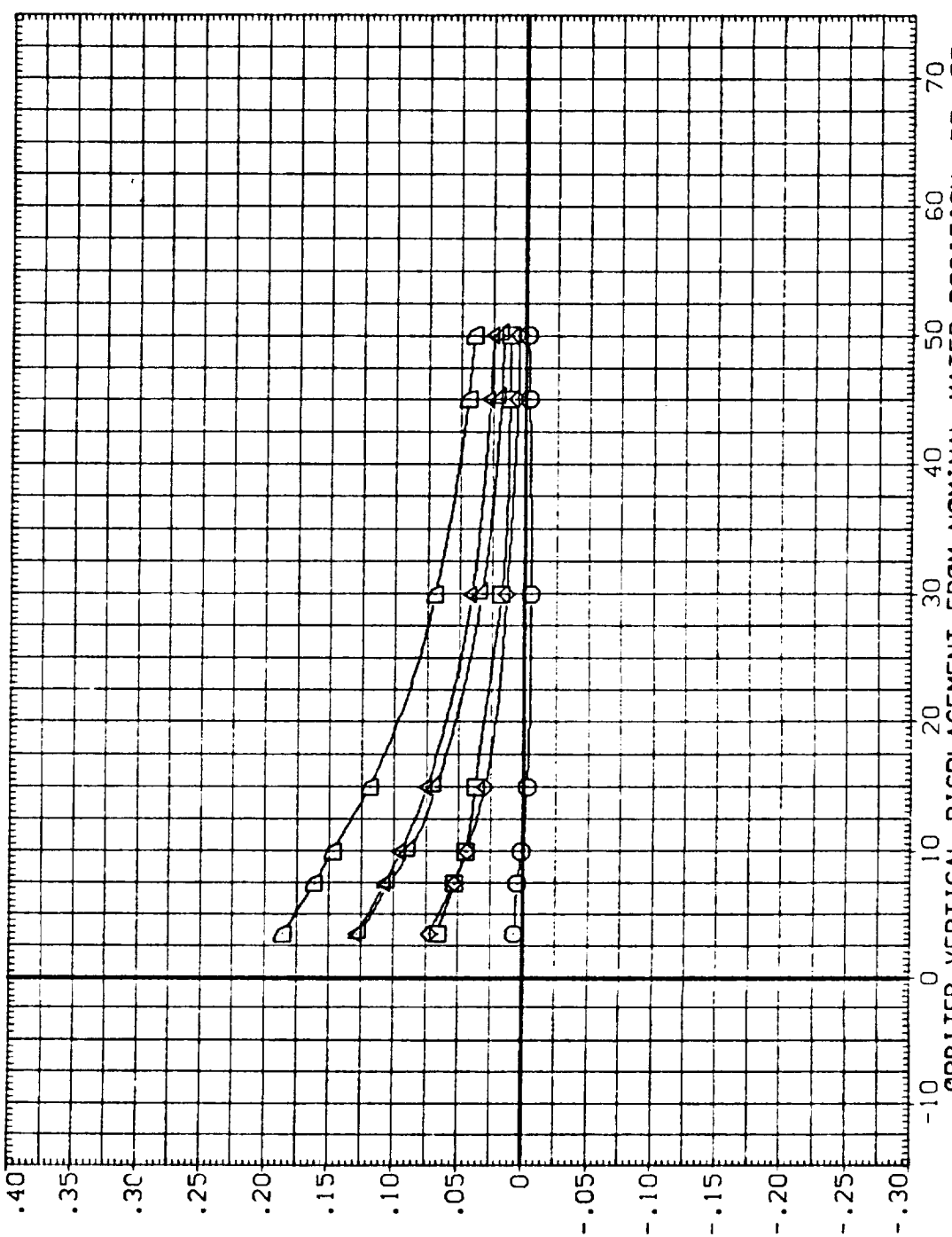


FIG. 26 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)  
 (A)ALPHAC= .00  
 ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ. FT.  
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVATION	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH040)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN.
(PNH022)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	5.000	YMRP .0000 IN.
(PNH010)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	5.000	.600	5.000	ZMRP 190.7500 IN.
						SCALE .0126

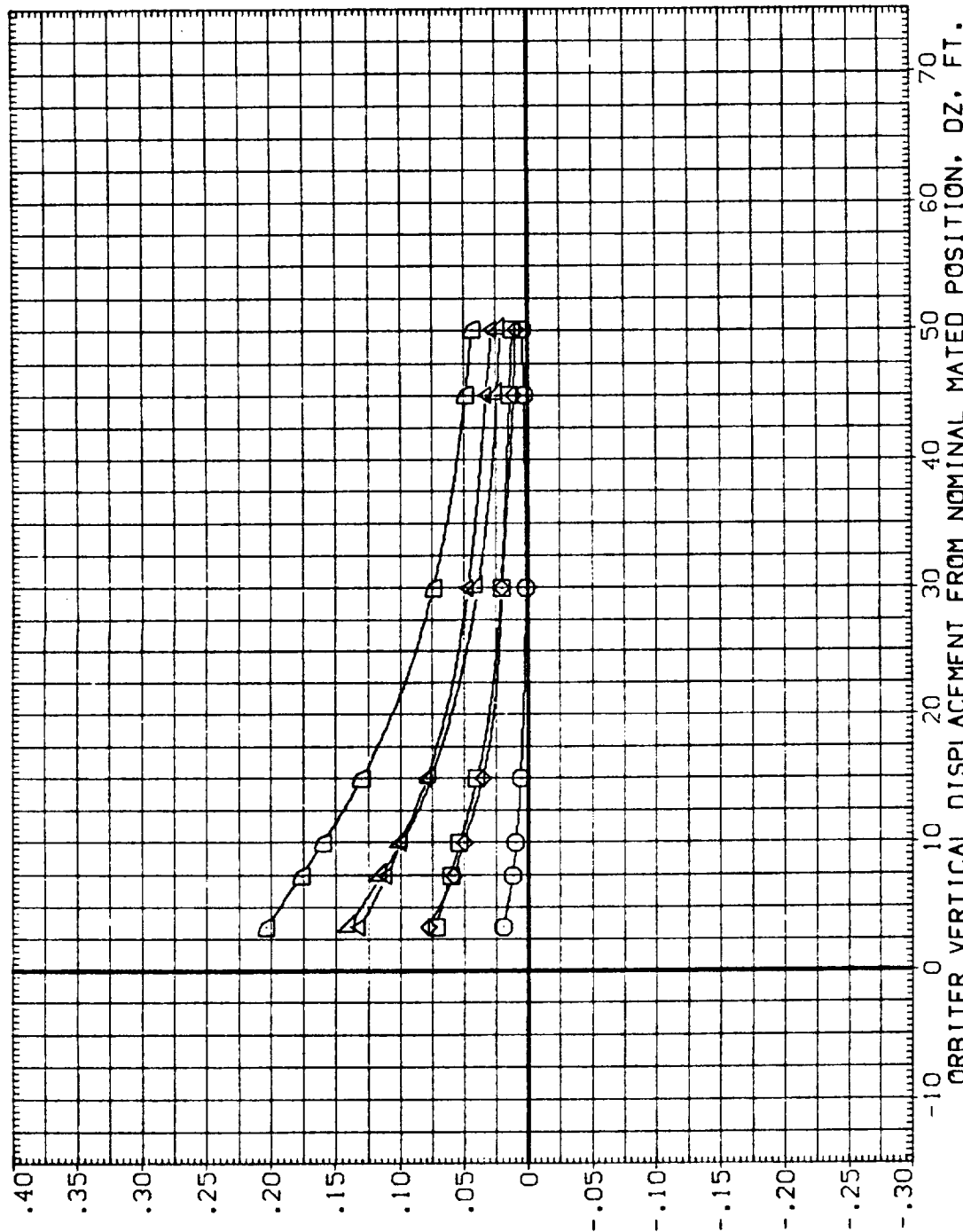
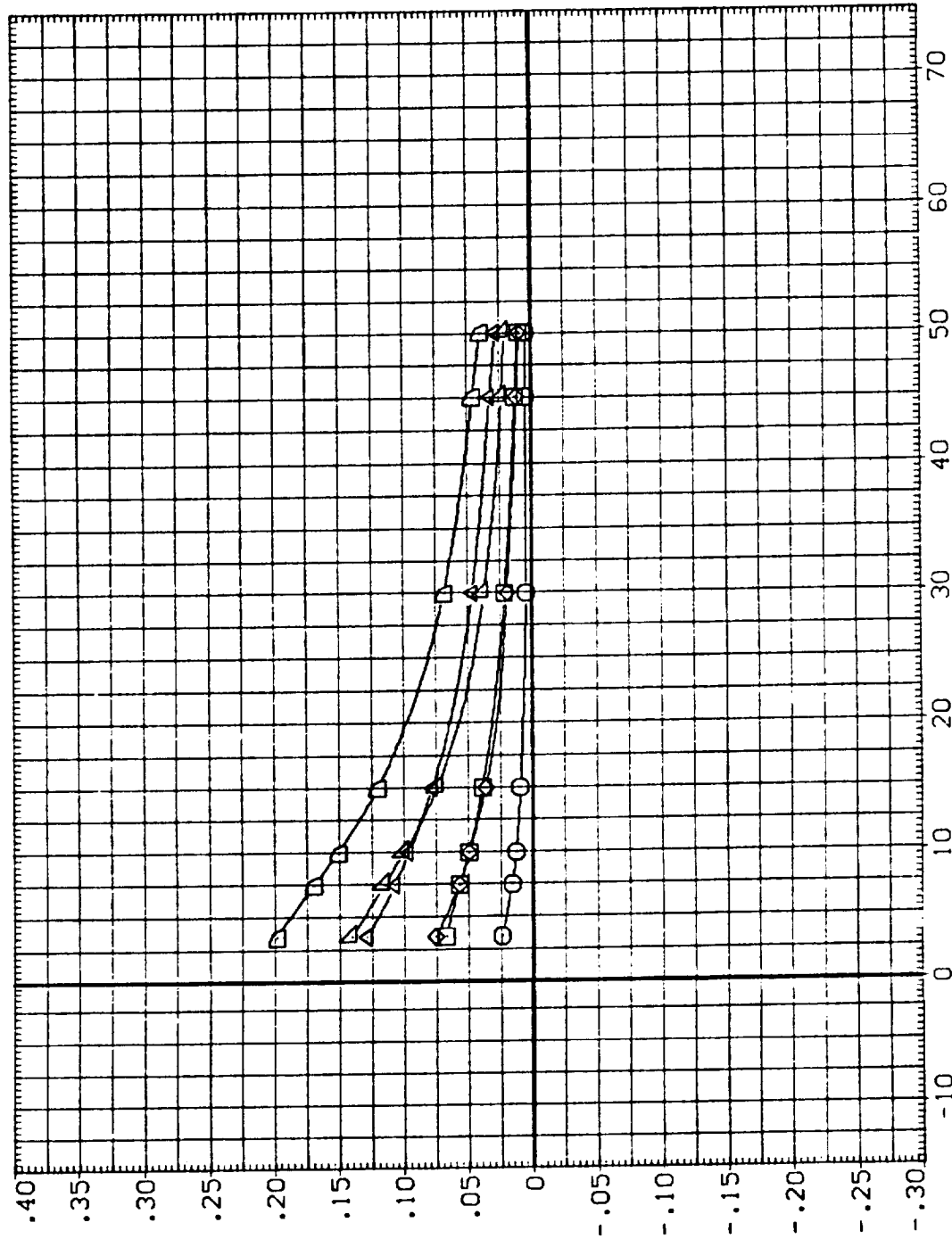


FIG. 26 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)

(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN. XC
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	YMRP .0000 IN. YC
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	ZMRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 26 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	4.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	6.000	.000	.600	5.000	XMRP 1109.0000 IN. X0
(4NH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	8.000	.000	.600	5.000	YMRP .0000 IN. Y0
(4NH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	8.000	.000	.600	5.000	ZMRP 375.0000 IN. Z0
						SCALE .0125

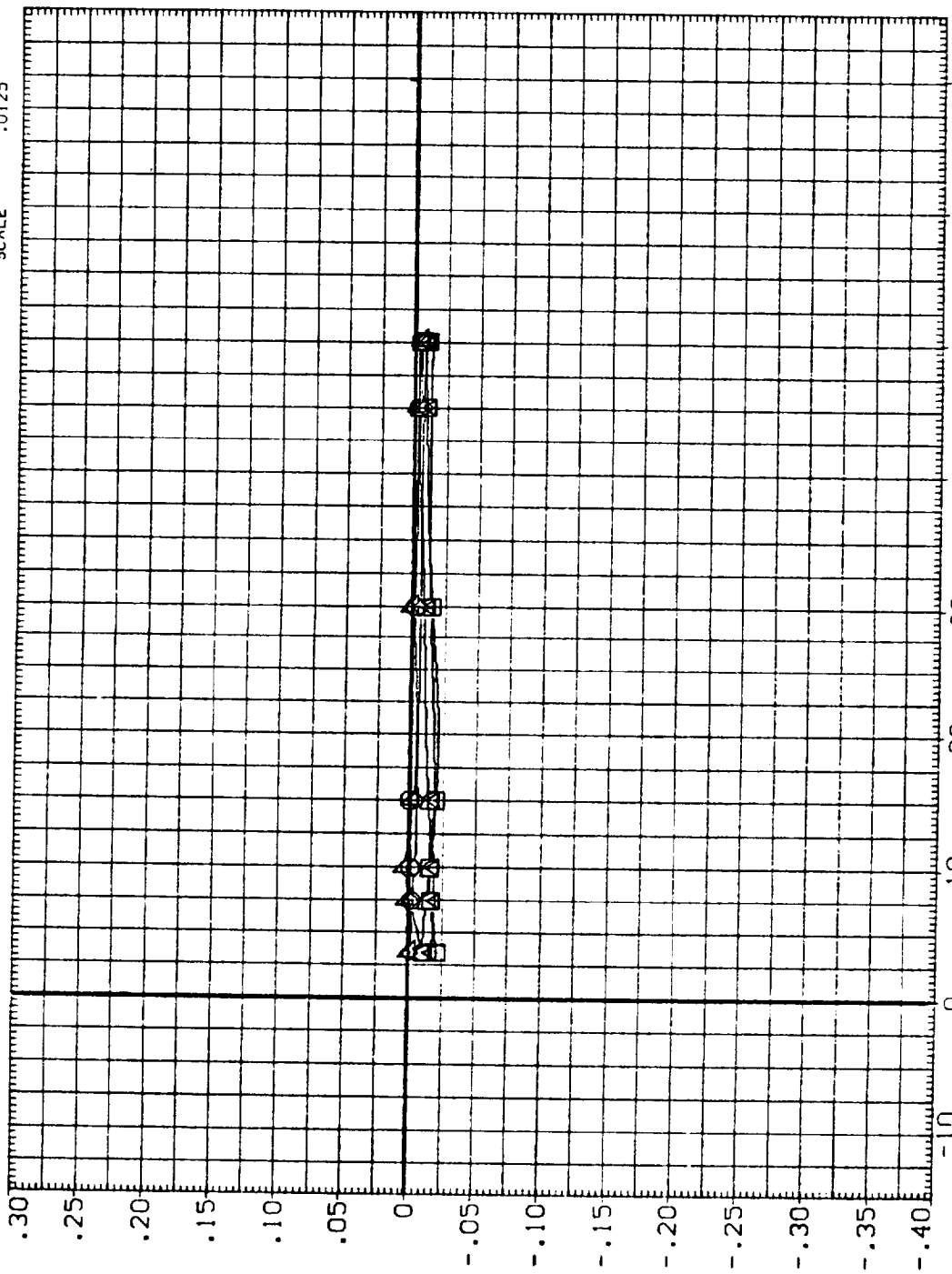
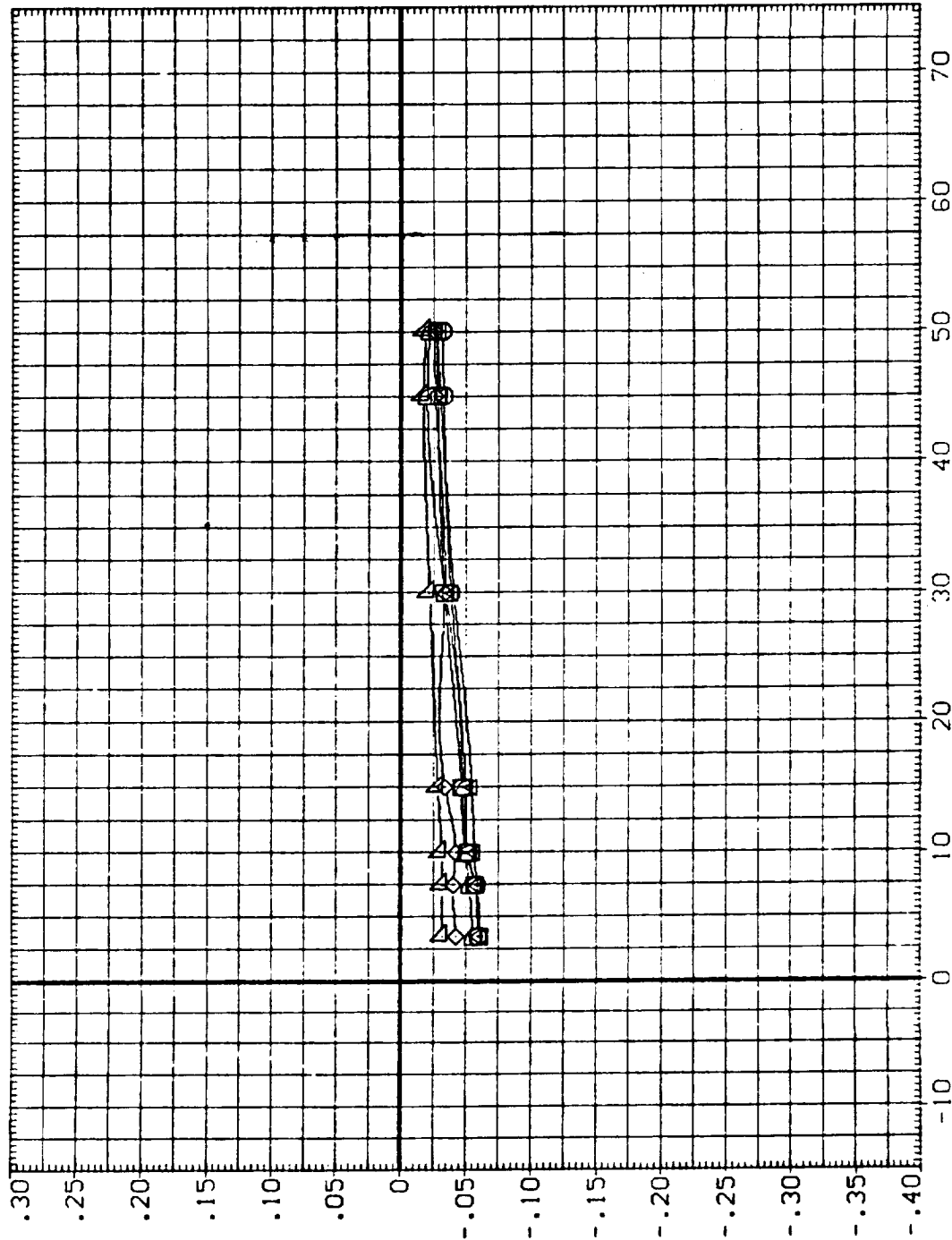


FIG. 27 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NHO20)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NHO40)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NHO23)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4NHO13)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP 1109.0000 IN. X0
(4NHO22)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	5.000	YMRP .0000 IN. Y0
(4NHO10)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	5.000	.600	5.000	ZMRP 375.0000 IN. Z0
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 27 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG.,ORB 1/C OFF)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH020)	ARC 14-120(CA23B) 747/1 AT1	4.000	.000	.600	5.000	SREF 2690.0000 SO.FT. 50.000
(4NH040)	ARC 14-120(CA23B) 747/1 AT1	4.000	.000	.600	5.000	LREF 474.8100 IN. 10.000
(4NH023)	ARC 14-120(CA23B) 747/1 AT1	6.000	.000	.600	5.000	BREF 936.8800 IN. 10.000
(4NH013)	ARC 14-120(CA23B) 747/1 AT1	6.000	.000	.600	5.000	XMRP 1109.0000 IN. 10.000
(4NH022)	ARC 14-120(CA23B) 747/1 AT1	8.000	.000	.600	5.000	YMRP 375.0000 IN. 10.000
(4NH010)	ARC 14-120(CA23B) 747/1 AT1	8.000	.000	.600	5.000	ZMRP 375.0000 IN. 10.000
						SCALE .0125

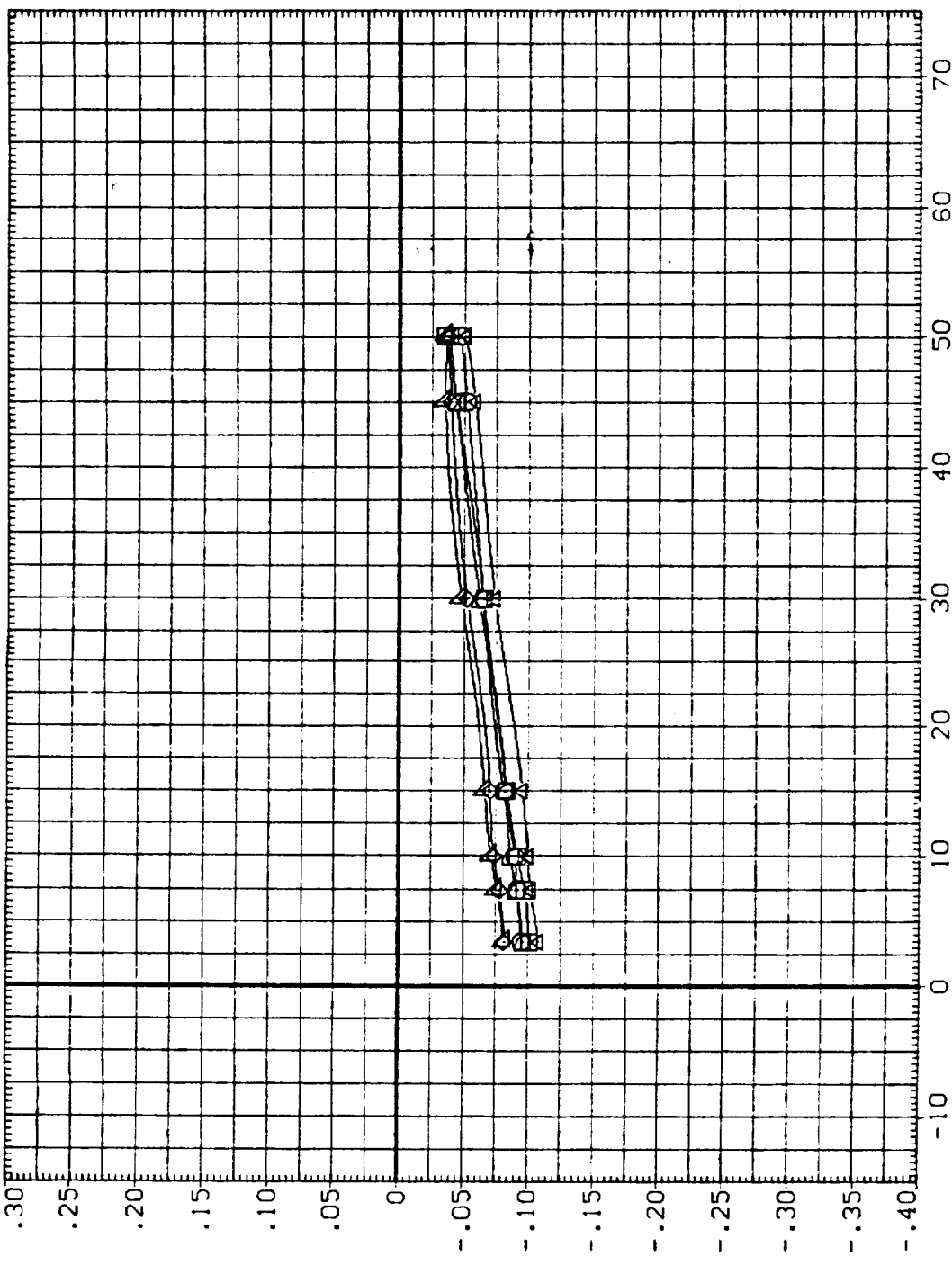


FIG. 27 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)  
 (C)ALPHAC= 4.00  
 ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, OZ, FT.  
 PAGE 204

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	(ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	YMRP 1109.0000 IN. X0
(4NH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	.000	.600	5.000	ZMRP 375.0000 IN. Y0
(4NH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	5.000	SCALE .0125

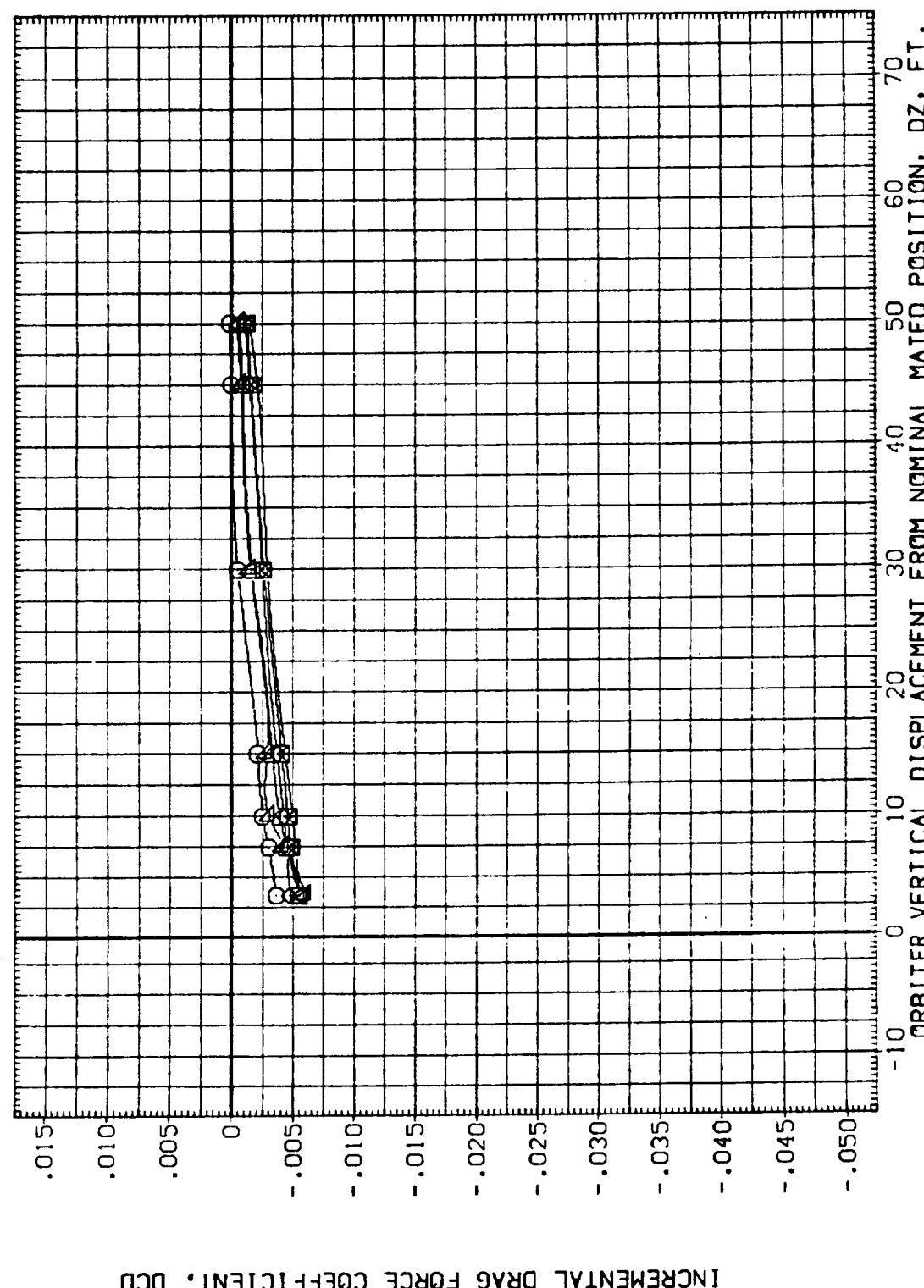


FIG. 27 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)  
(A)ALPHAC=.00





DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH020)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH040)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP 1109.0000 IN. X0
(4NH022)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	5.000	ZMRP 375.0000 IN. Z0
(4NH010)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	5.000	.600	5.000	SCALE .0125

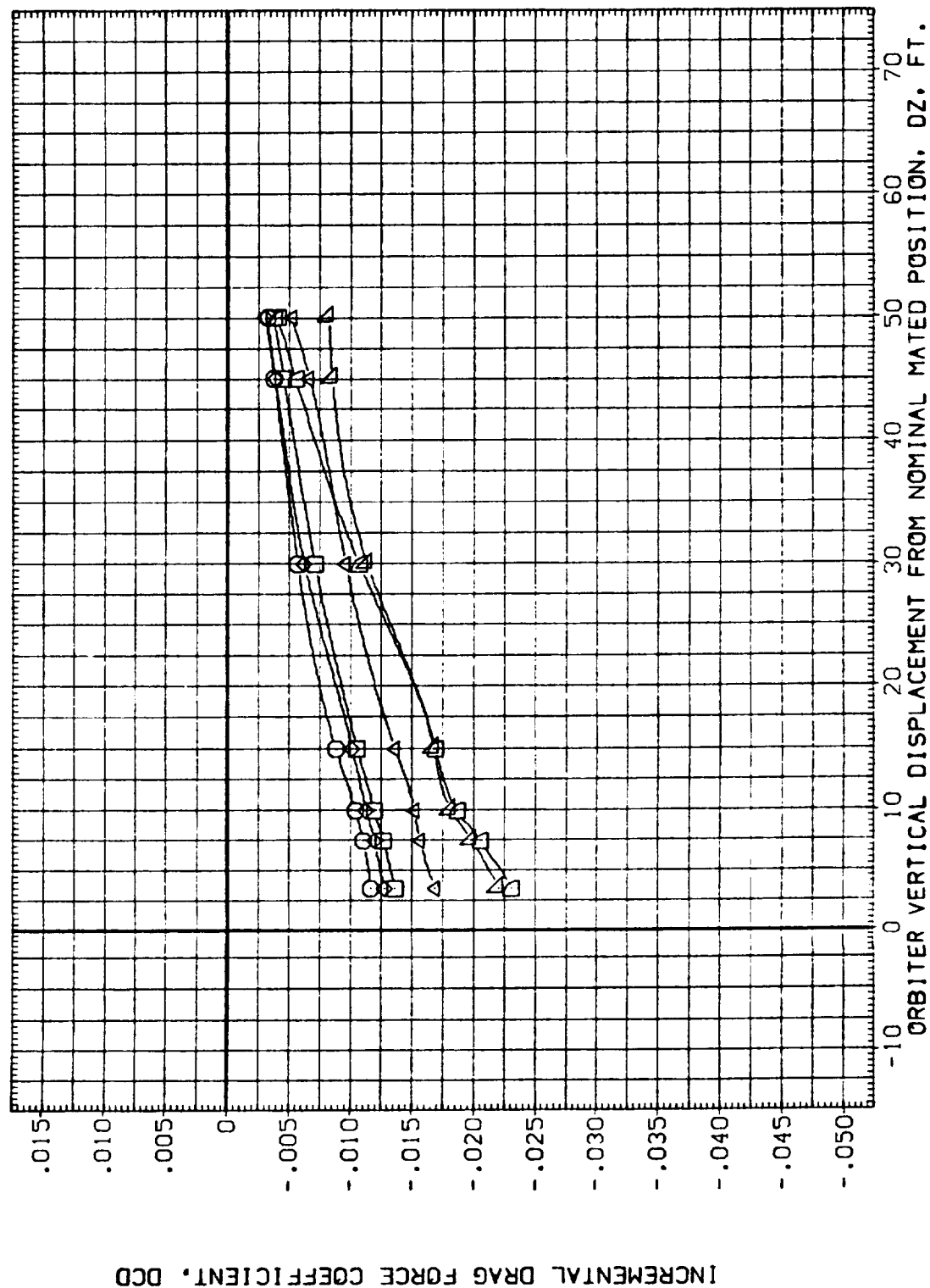
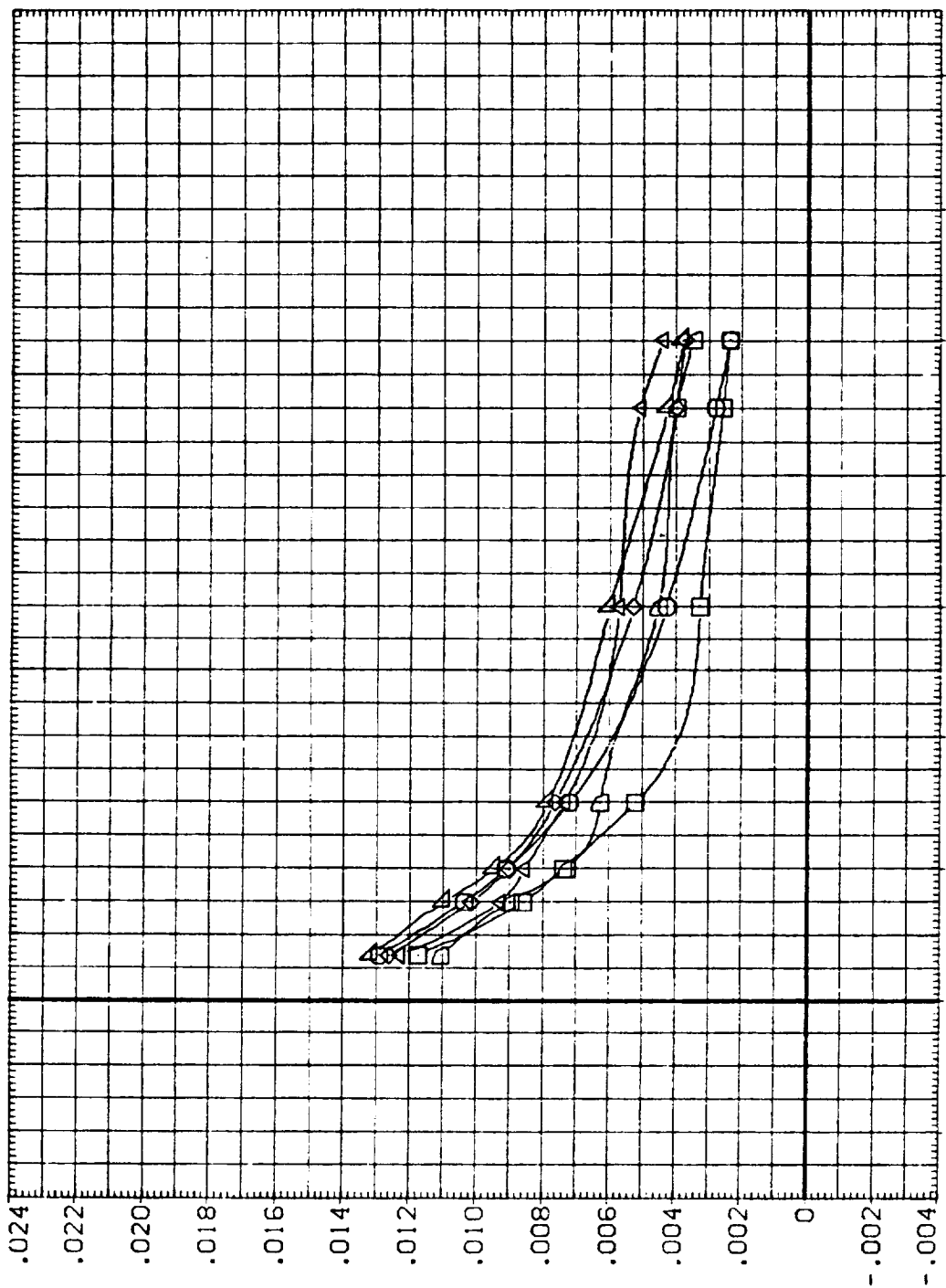


FIG. 27 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG.,ORB T/C OFF)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	10RB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH020)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH040)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP 1109.0000 IN. X0
(4NH022)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	.000	.600	5.000	YMRP .0000 IN. Y0
(4NH010)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	5.000	ZMRP 375.0000 IN. Z0
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 27 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
(A)ALPHAC= .00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH020)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 50. FT.
(4NH040)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN. X0
(4NH013)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	5.000	.600	5.000	XMRP 1109.0000 IN. X0
(4NH022)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	5.000	YMRP 375.0000 IN. Y0
(4NH010)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	5.000	.600	5.000	ZMRP 375.0000 IN. Z0
						SCALE .0125

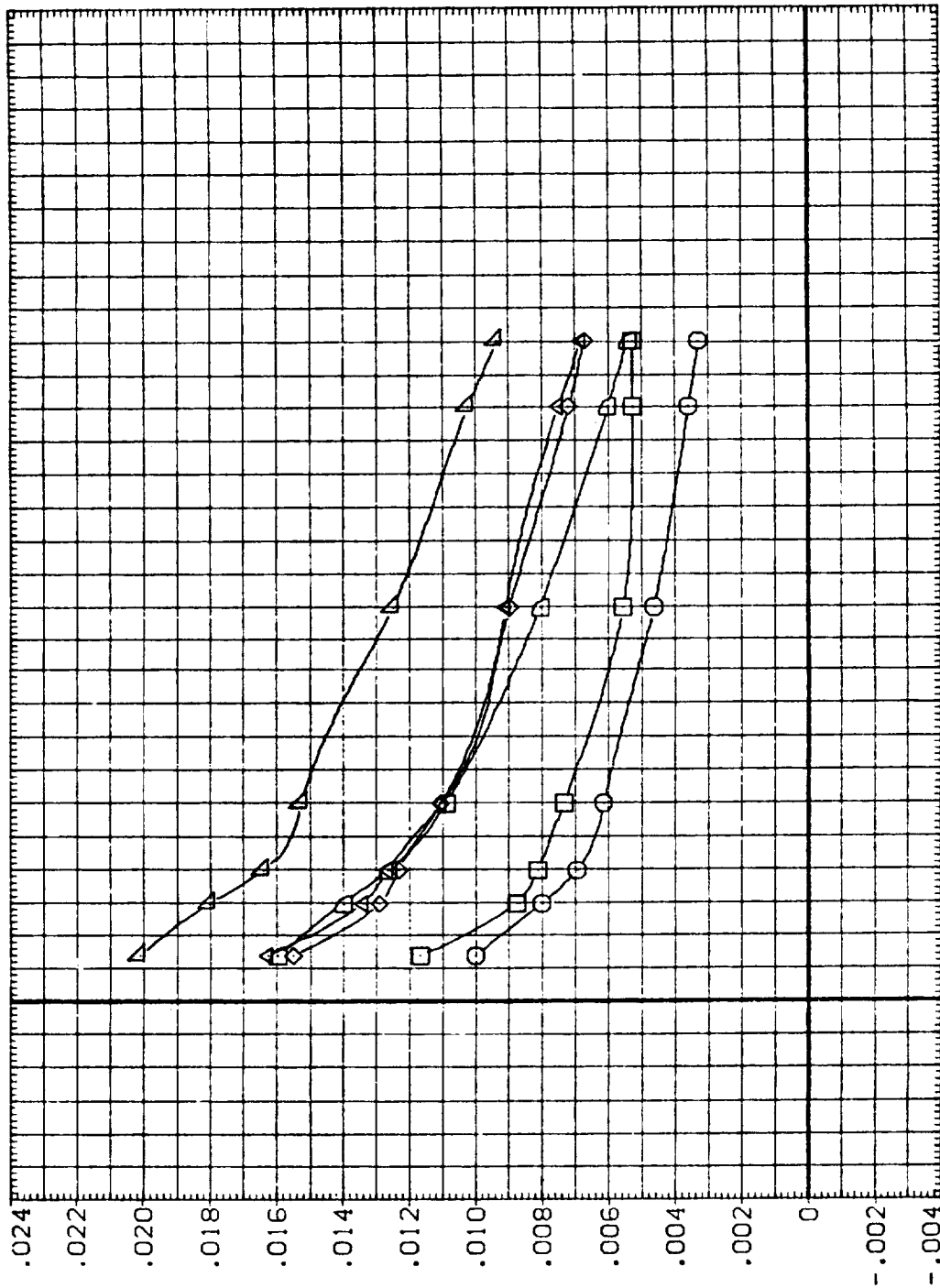


FIG. 27 EFFECT OF ORBITER ELEVONS ON ORBITER (CARRIER STAB= 5.0 DEG., ORB T/C OFF)  
 (C)ALPHAC= 4.00 PAGE 210

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION		
(PNH021)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF	5500.0000	50.FT.
(PNH020)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	LREF	327.7800	IN.
(PNH024)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF	2348.0400	IN. XC
(PNH023)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	XMRP	1339.9000	IN. YC
(PNH025)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	ZMRP	190.7500	IN. ZC
(PNH022)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	SCALE	.0125	

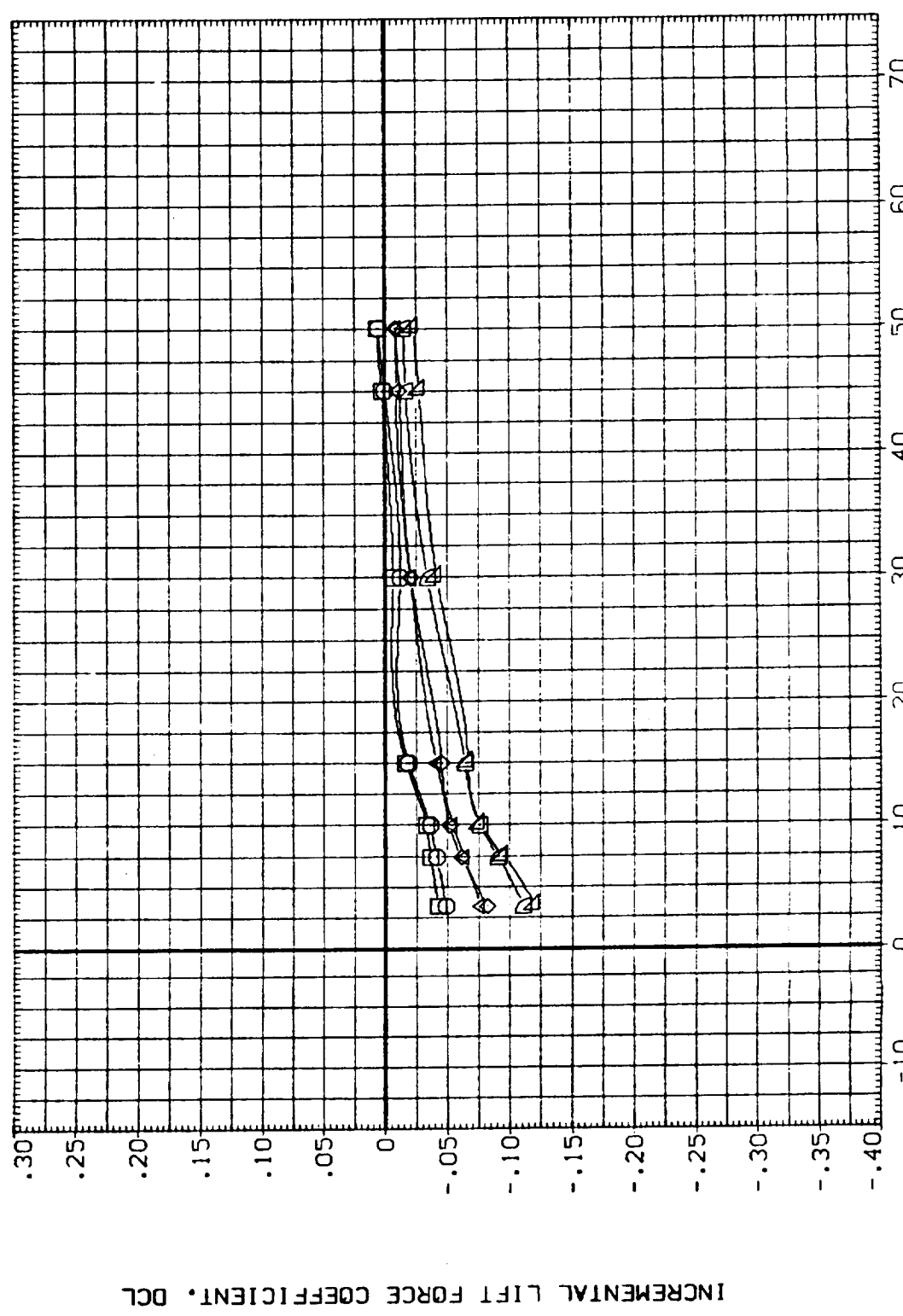


FIG. 28 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)  
 (A)ALPHAC= .00

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 Q251 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)	4.000	.000	.600	-1.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 Q251 (CARRIER DATA)	6.000	.000	.600	5.000	XHRP 1339.5000 IN. XC
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 Q251 (CARRIER DATA)	8.000	.000	.600	-1.000	YHRP .0000 IN. YC
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 Q251 (CARRIER DATA)	8.000	.000	.600	5.000	ZHRP 190.7500 IN. ZC
						SCALE .0125

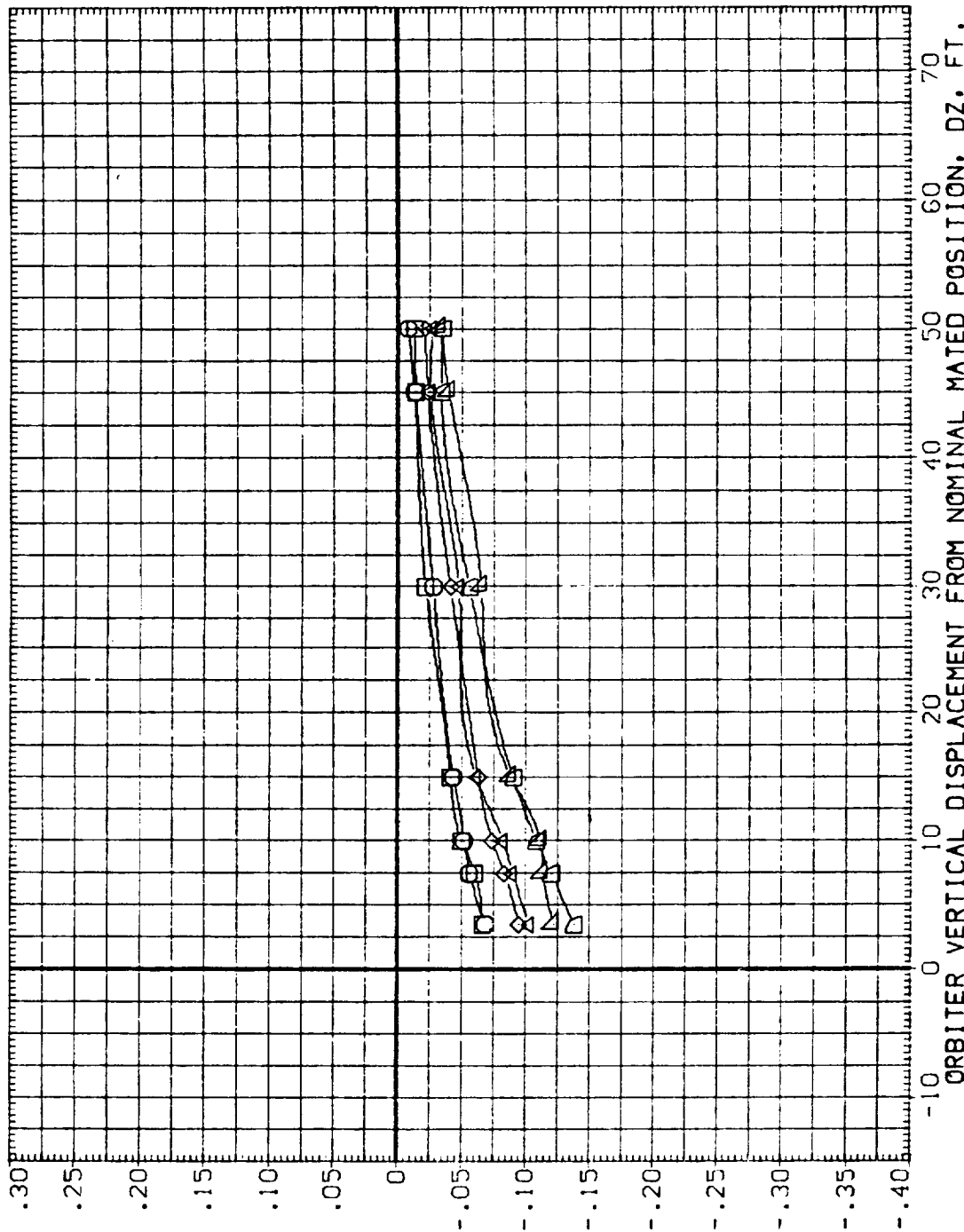


FIG. 28 EFFECT OF CARRIER STAB ON CARRIER ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)

(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF	5500.0000	SQ.FT.	
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	LREF	327.7800	IN.	
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF	2348.0400	IN.	XC
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	XMRP	1339.9000	IN.	YC
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP	.0000	IN.	YC
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	ZMRP	190.7500	IN.	ZC
						SCALE			.0125

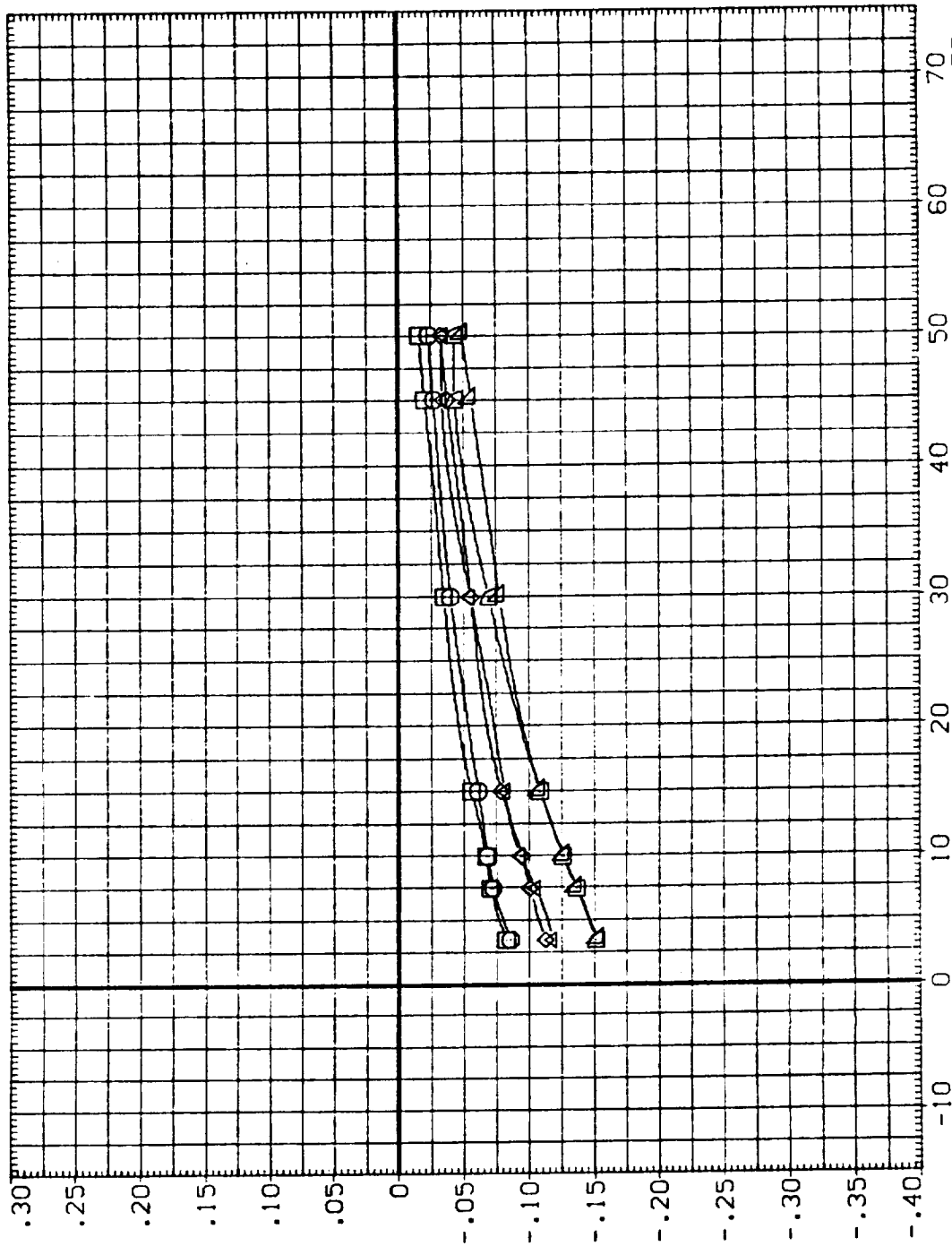


FIG. 28 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 50. FT.
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.9000 IN. XC
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP 190.7500 IN. YC
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	ZMRP 190.7500 IN. ZC
						SCALE .0125

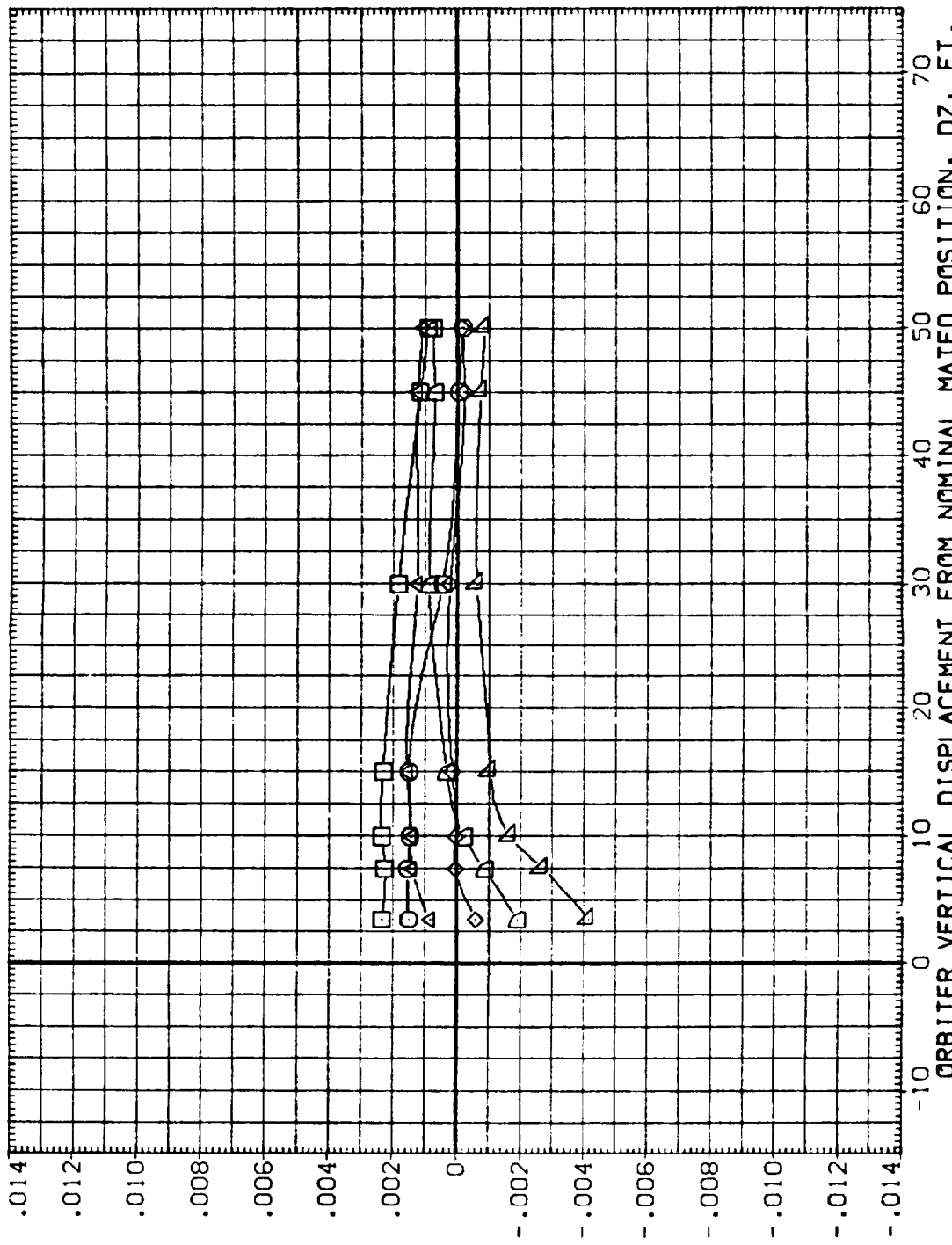


FIG. 28 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)  
(A)ALPHAC= .00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.9000 IN.
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP 190.7500 IN.
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	ZMRP 190.7500 IN.
						SCALE .0125

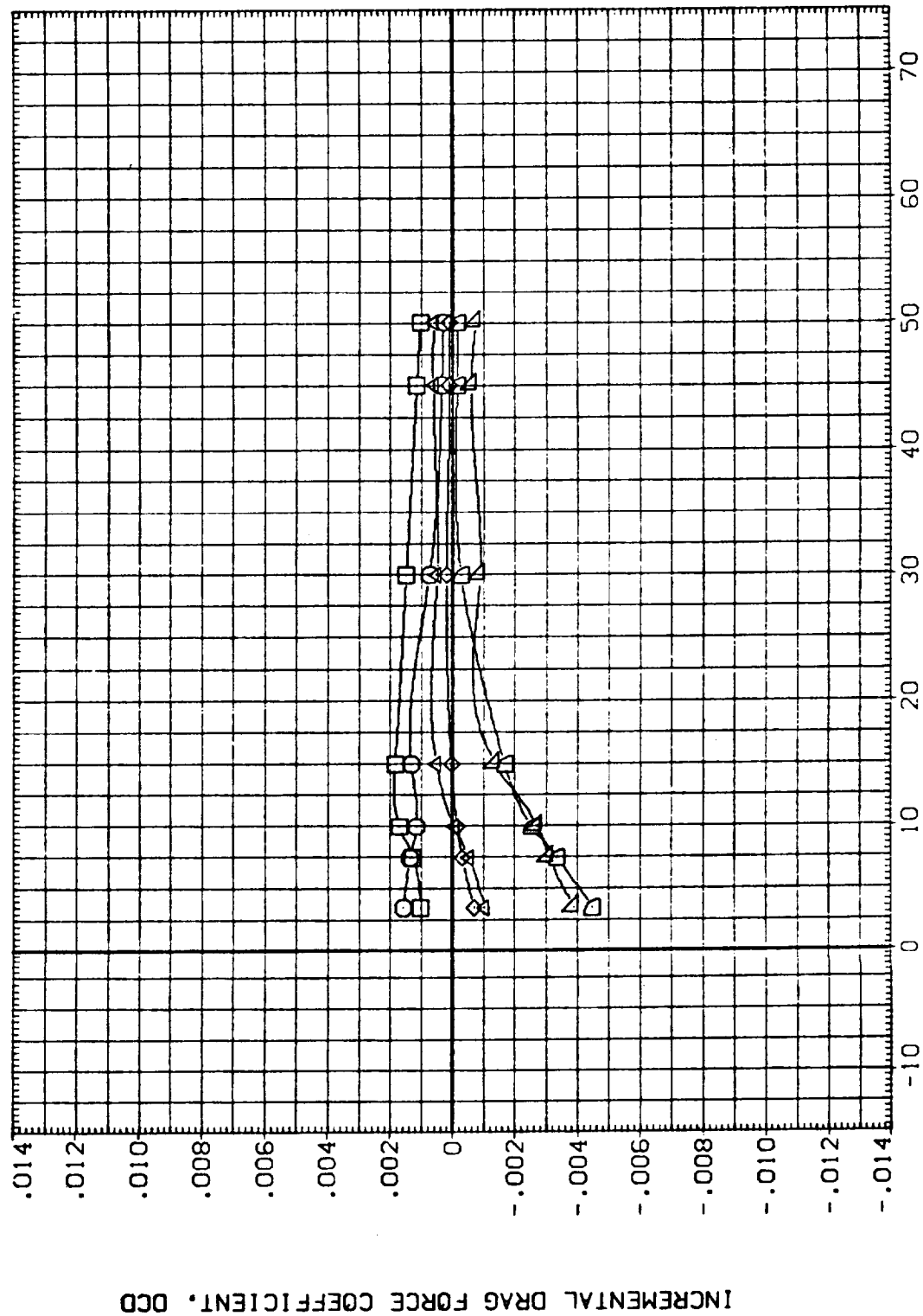


FIG. 28 EFFECT OF CARRIER STAB ON CARRIER ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)

INCREMENTAL DRAG FORCE COEFFICIENT, CDD

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ. FT.
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.9000 IN.
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN.
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	ZMRP 190.7500 IN.
						SCALE .0125

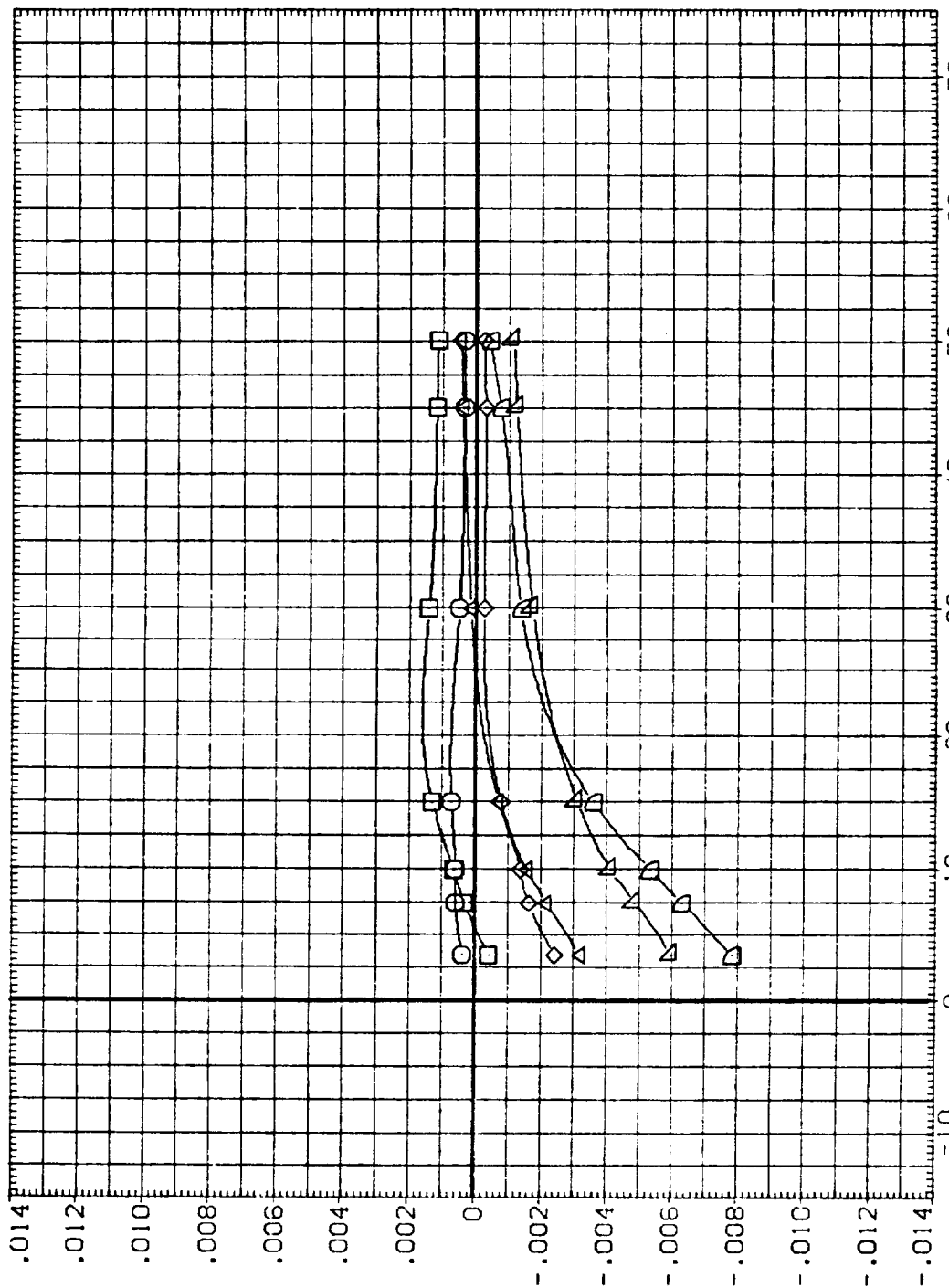


FIG. 28 EFFECT OF CARRIER STAB ON CARRIER(ORB) ELEVONS AT 0.0 DEG., ORB T/C OFF)  
(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITAL	ELEVATION	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.9000 IN. XC
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN. YC
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	ZMRP 190.7500 IN. ZC
						SCALE .0125

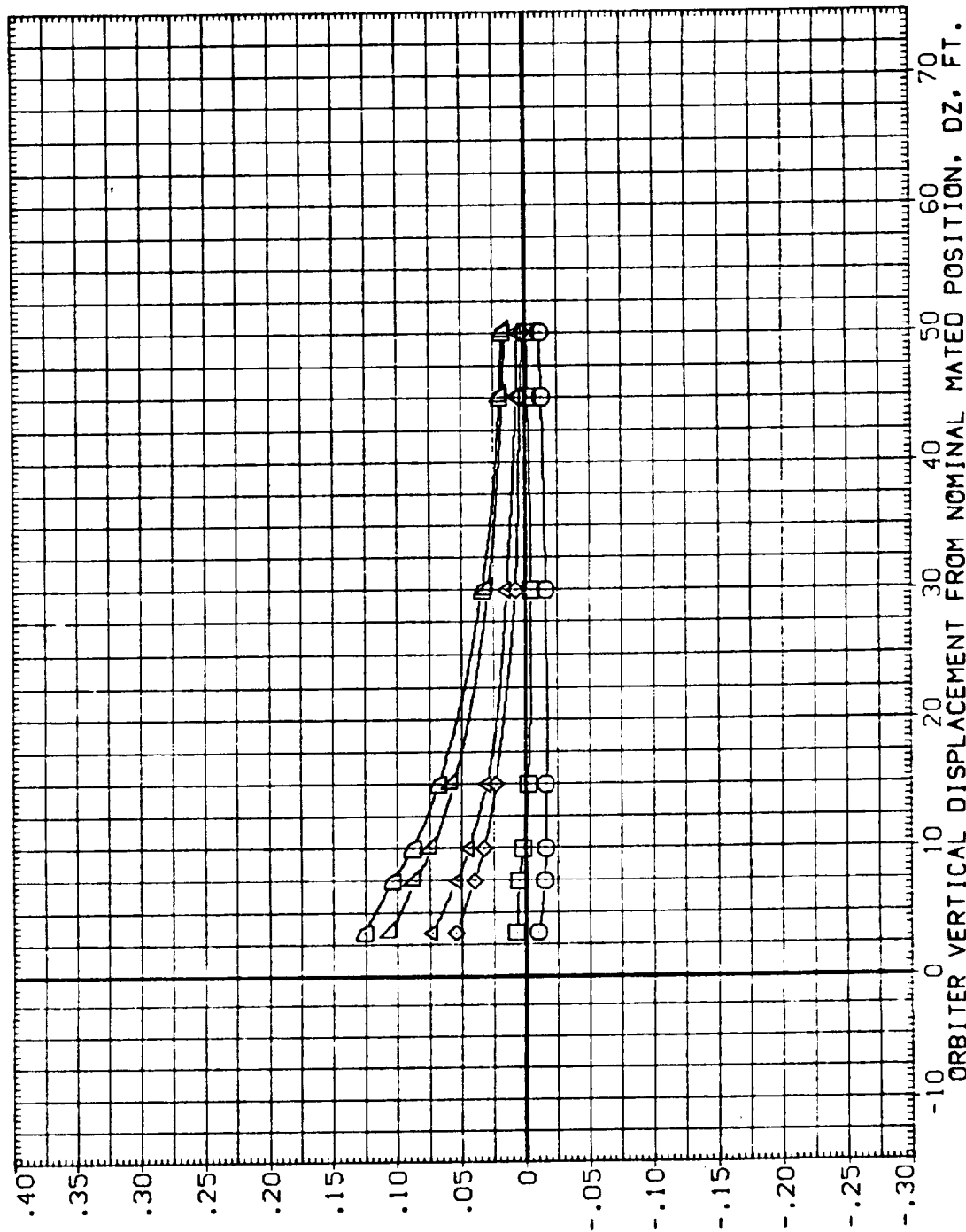


FIG. 28 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)

(A)ALPHAC= .00

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SO.FT.
(PNH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.9000 IN. XC
(PNH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	ZMRP .0000 IN. YC
(PNH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	ZMRP 190.7500 IN. ZC
						SCALE .0125

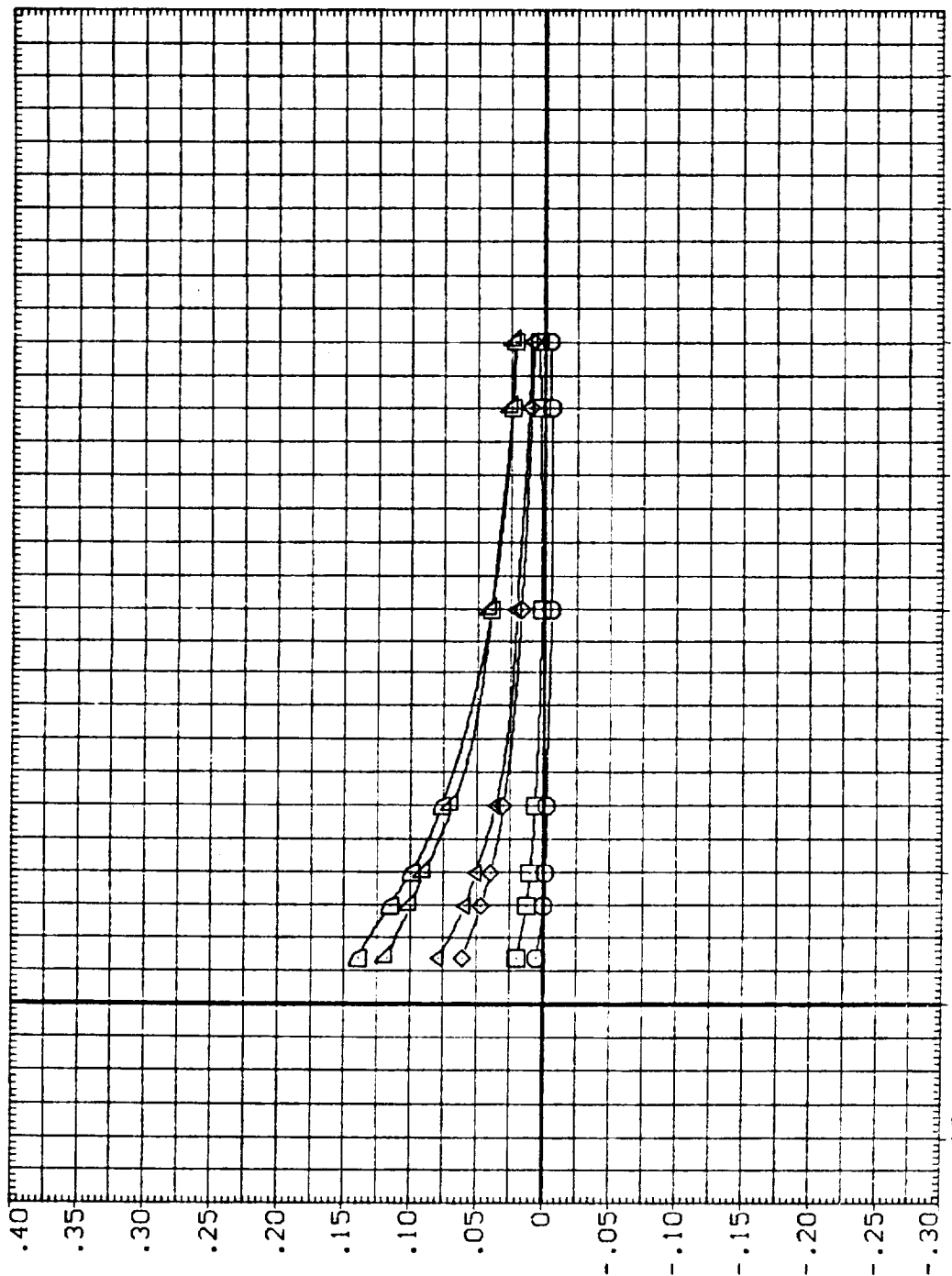


FIG. 28 EFFECT OF CARRIER STAB ON CARRIER ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)

(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH021)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	-1.000	SREF 5500.0000 SO.FT.
(PNH020)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN. XC
(PNH023)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.9000 IN. YC
(PNH025)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN. ZC
(PNH022)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	.000	.600	5.000	ZMRP 190.7500 IN. ZC
						SCALE .0125

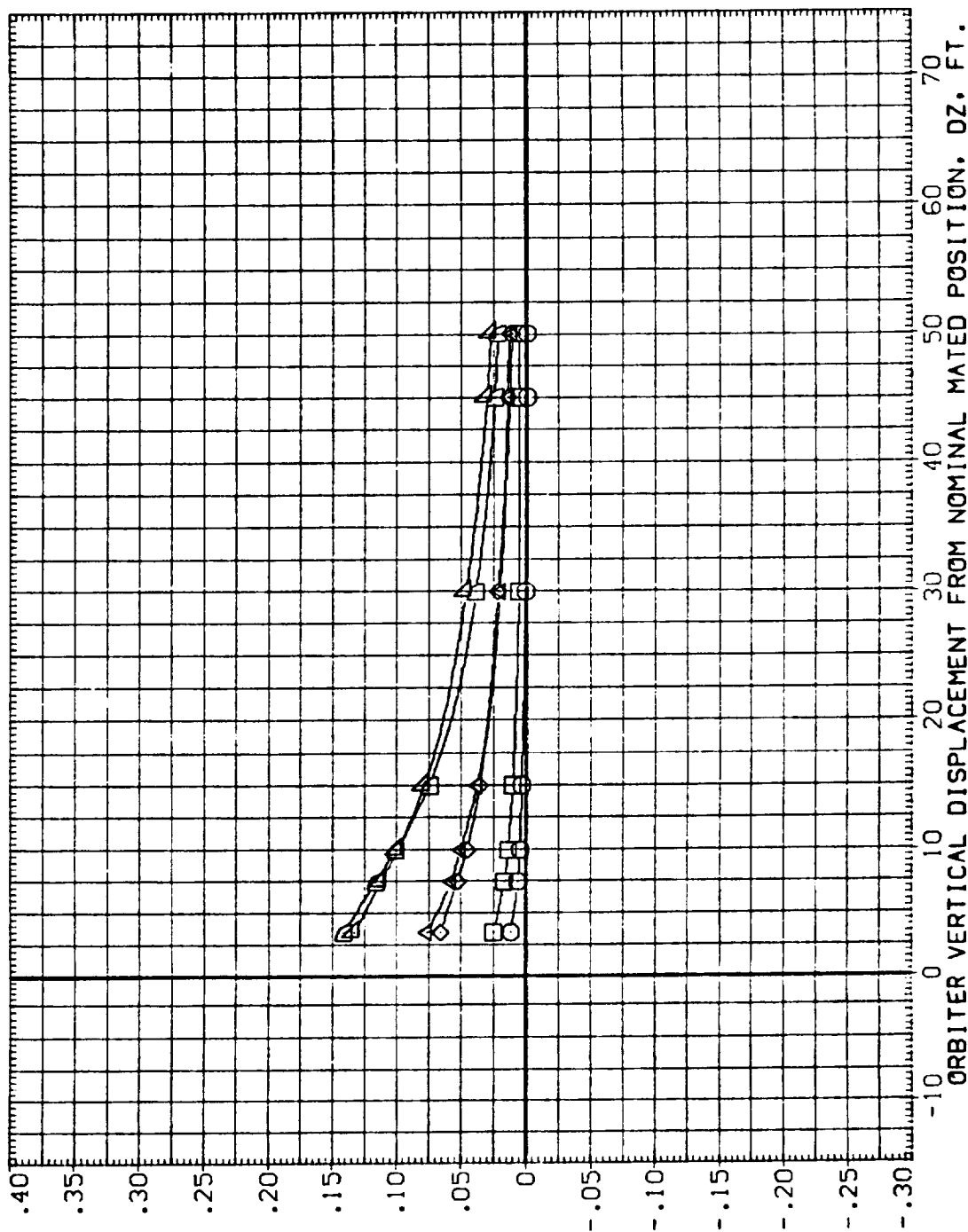


FIG. 28 EFFECT OF CARRIER STAB ON CARRIER ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH020)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	4.000	.000	.600	-1.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	.000	.600	-1.000	XMRP 1109.0000 IN. X0
(4NH025)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	8.000	.000	.600	-1.000	YMRP 375.0000 IN. Y0
(4NH022)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	8.000	.000	.600	-1.000	ZMRP 375.0000 IN. Z0
						SCALE .0125

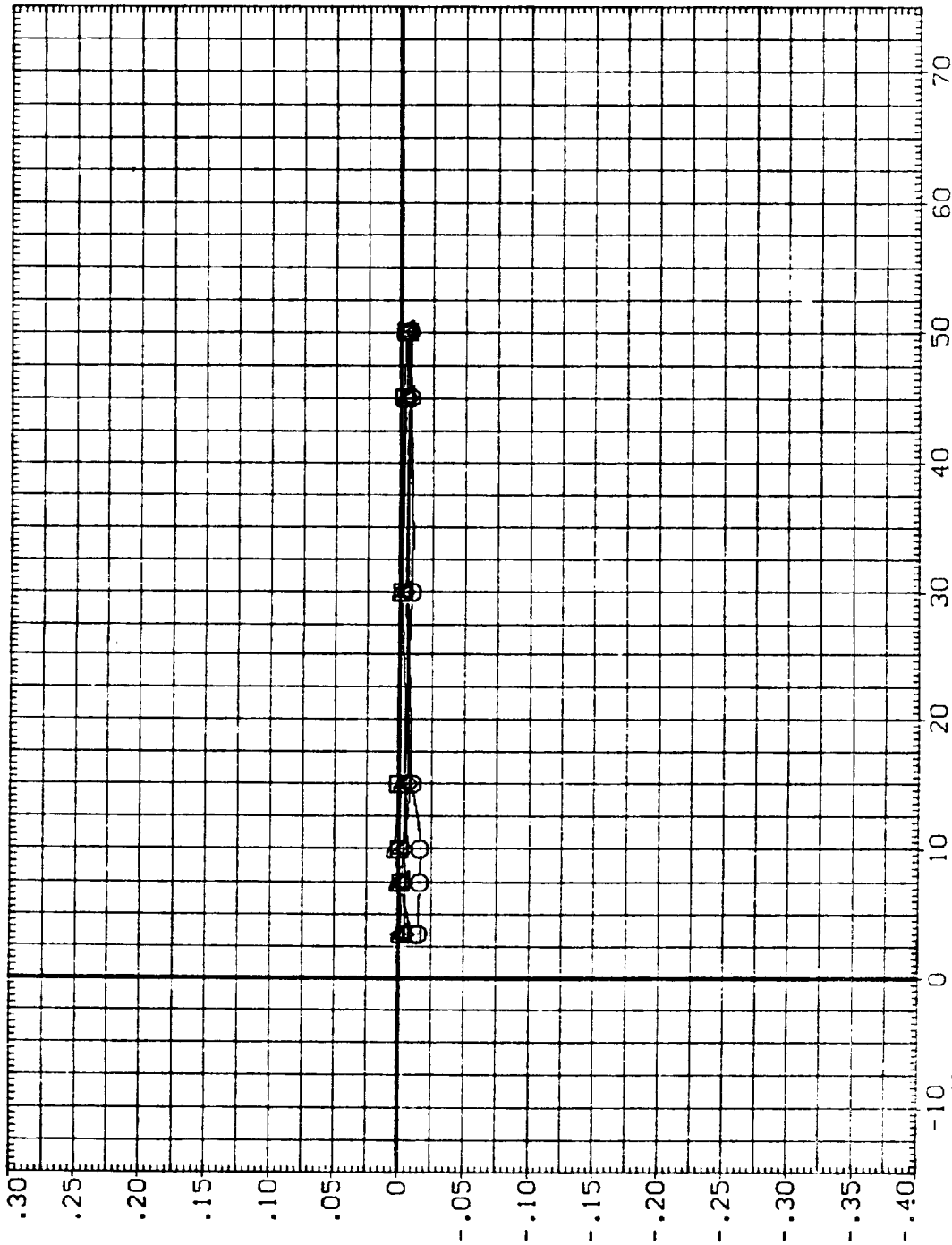


FIG. 29 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)  
(A)ALPHAC= .00 PAGE 220

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH020)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN. X0
(4NH023)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	-1.000	XMRP 1109.0000 IN. Y0
(4NH025)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	-1.000	ZMRP 375.0000 IN. Z0
(4NH022)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	5.000	SCALE .0125

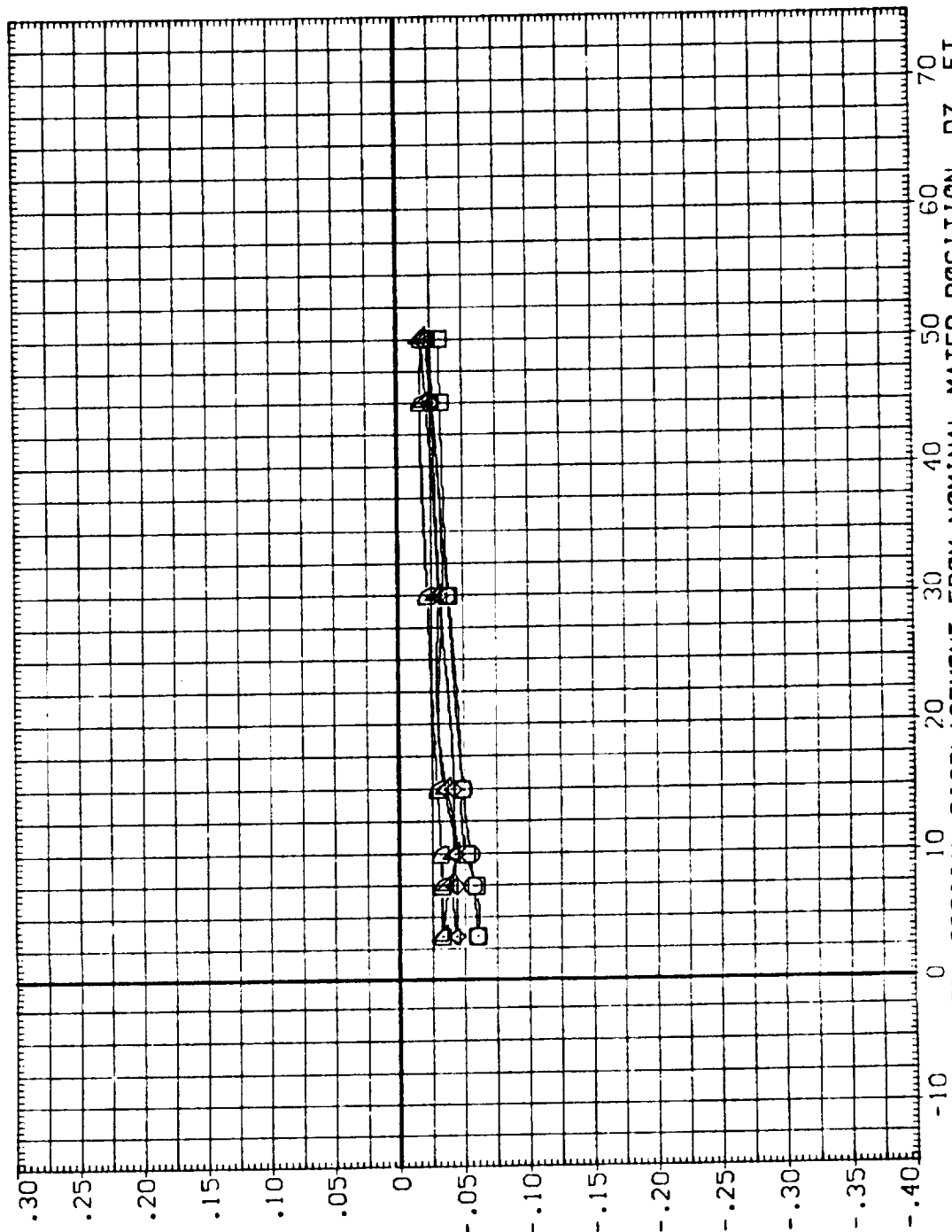


FIG. 29 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH021)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF	2690.0000 SQ.FT.
(4NH020)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	5.000	LREF	474.8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF	936.6800 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	YMRP	1109.0000 IN.
(4NH025)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	-1.000	ZMRP	375.0000 IN.
(4NH022)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	5.000	SCALE	.0125

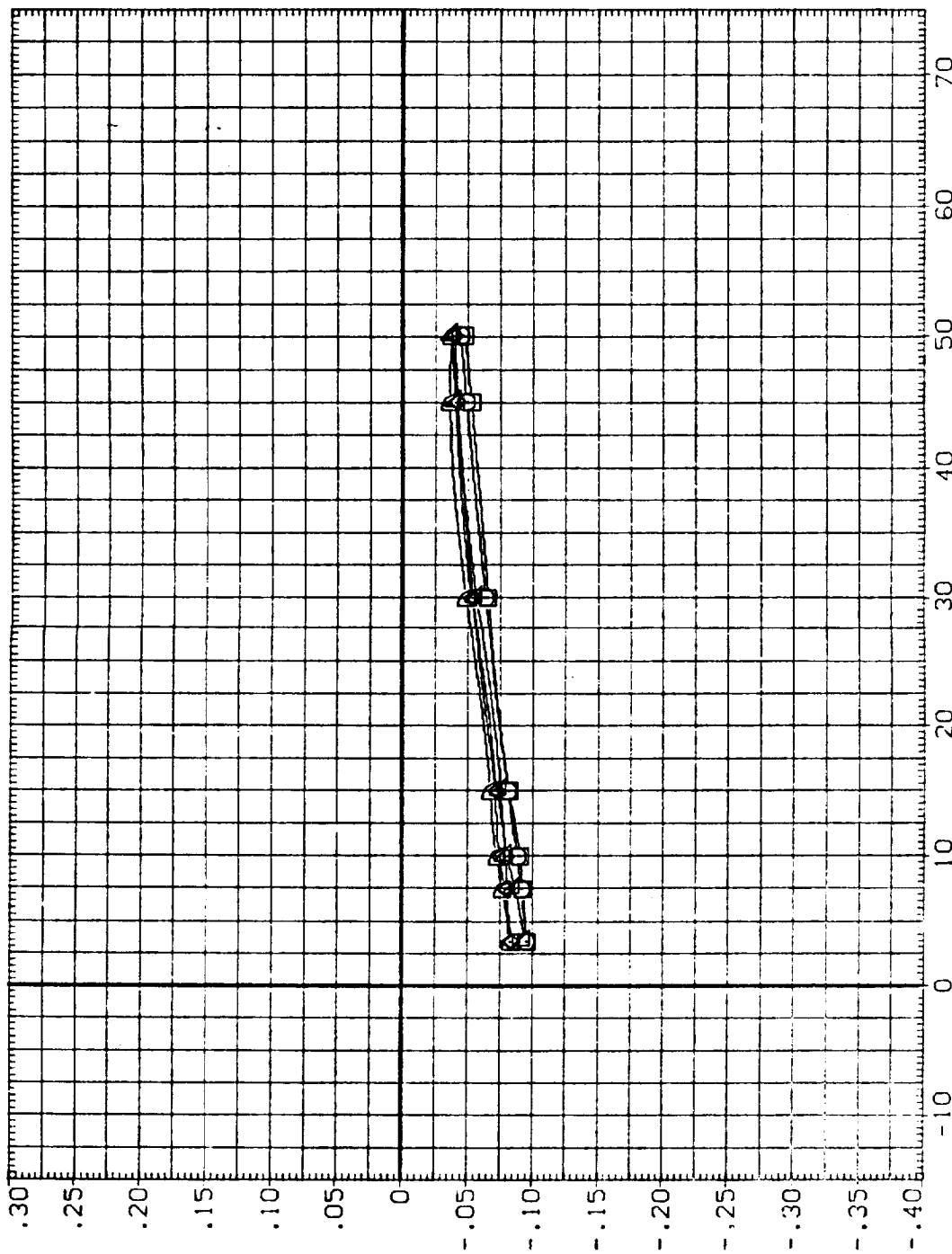


FIG. 29 EFFECT OF CARRIER STAB ON ORBITER(ORBITER ELEVONS AT 0.0 DEG., ORBIT T/C OFF)  
(C)ALPHAC= 4.00





INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH020)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	5.000	XMRP 1109.0000 IN.
(4NH025)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	.000	.600	-1.000	YMRP 375.0000 IN.
(4NH022)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	.000	.600	5.000	ZMRP 375.0000 IN.
						SCALE .0125

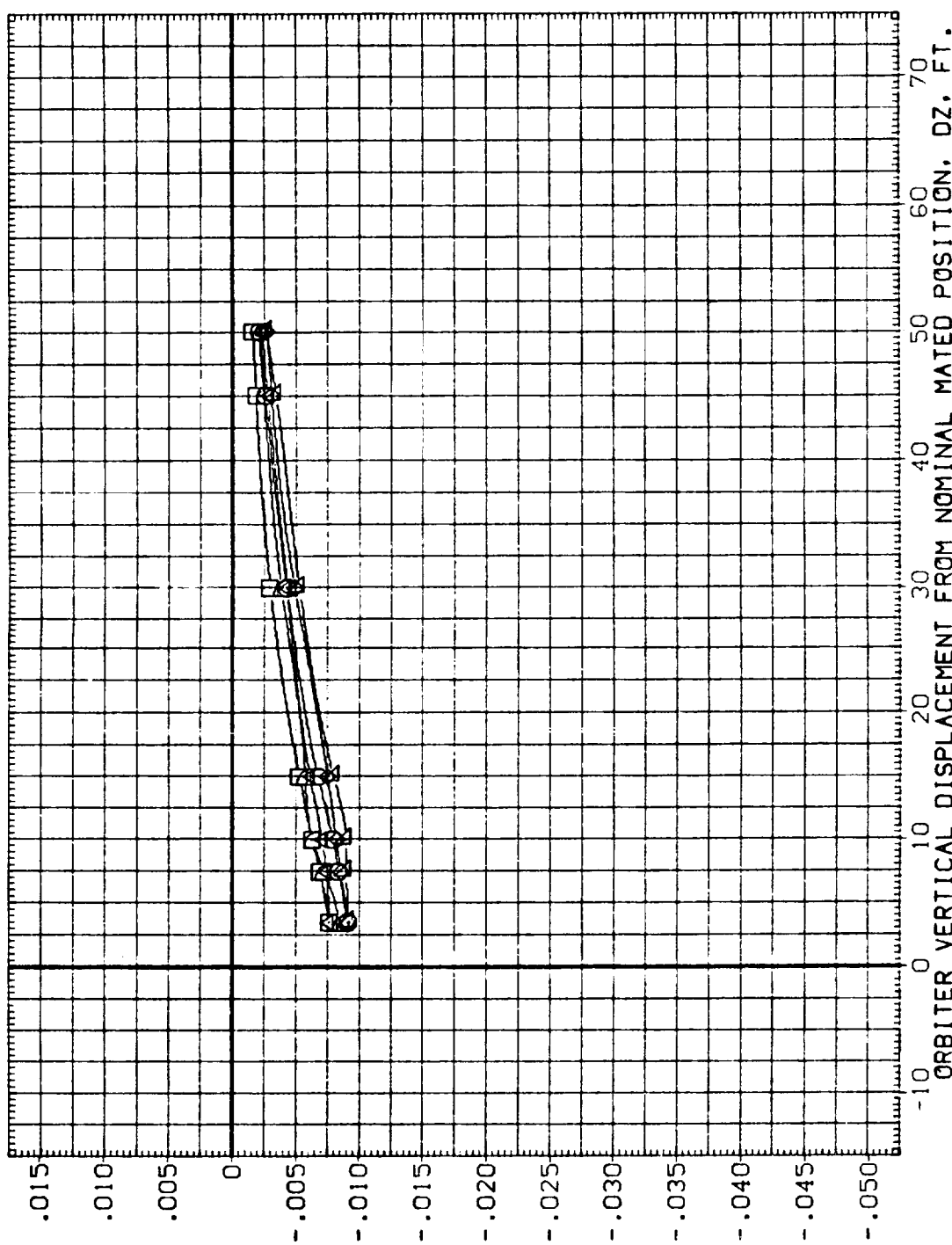


FIG. 29 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)  
(B)ALPHAC= 2.00

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	□	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH022)	□	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	4.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	□	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH024)	□	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	.000	.600	5.000	XHRP 1109.0000 IN. X0
(4NH025)	□	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	8.000	.000	.600	-1.000	YHRP 375.0000 IN. Y0
(4NH026)	□	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	8.000	.000	.600	5.000	ZHRP .0125 SCALE

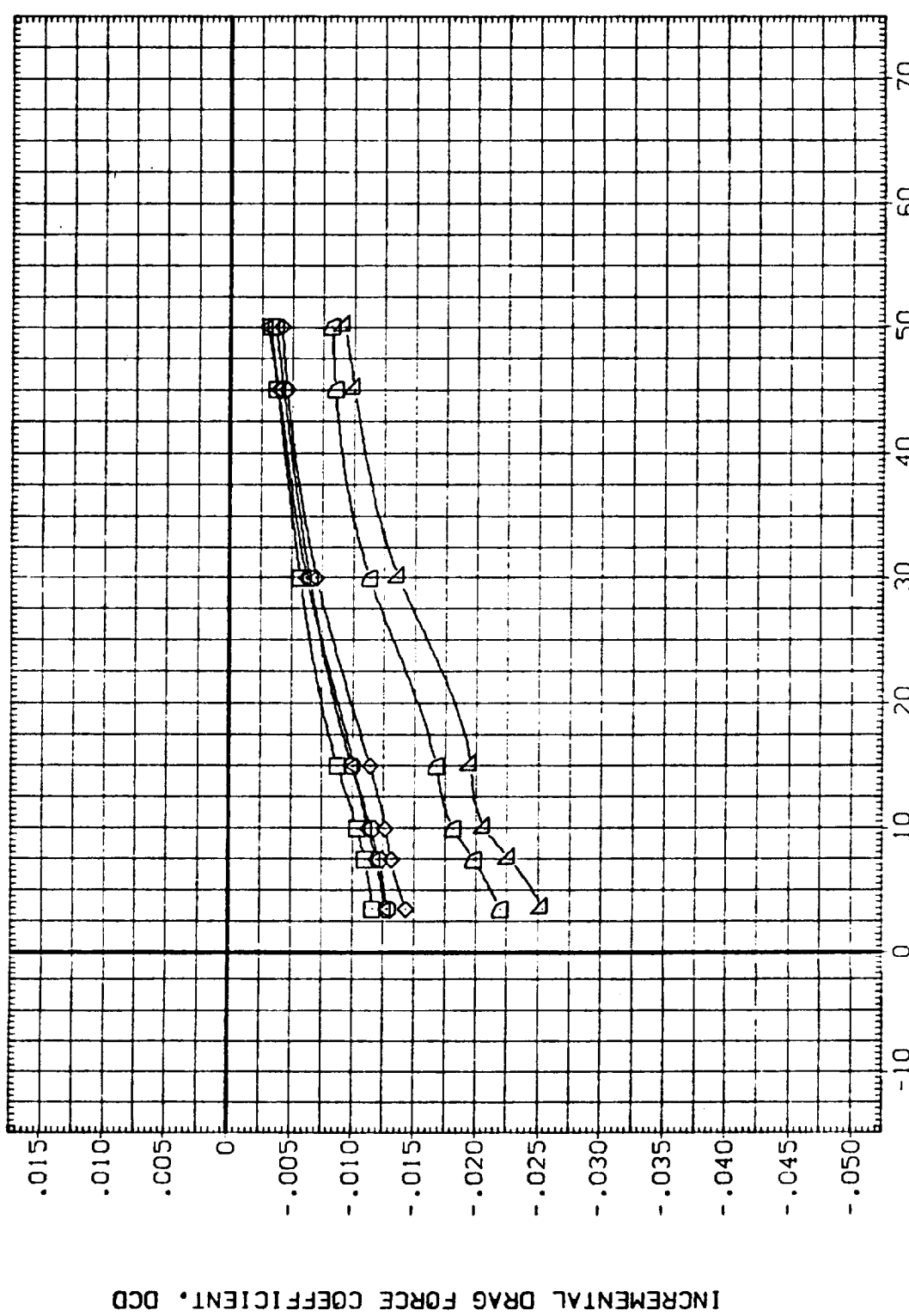
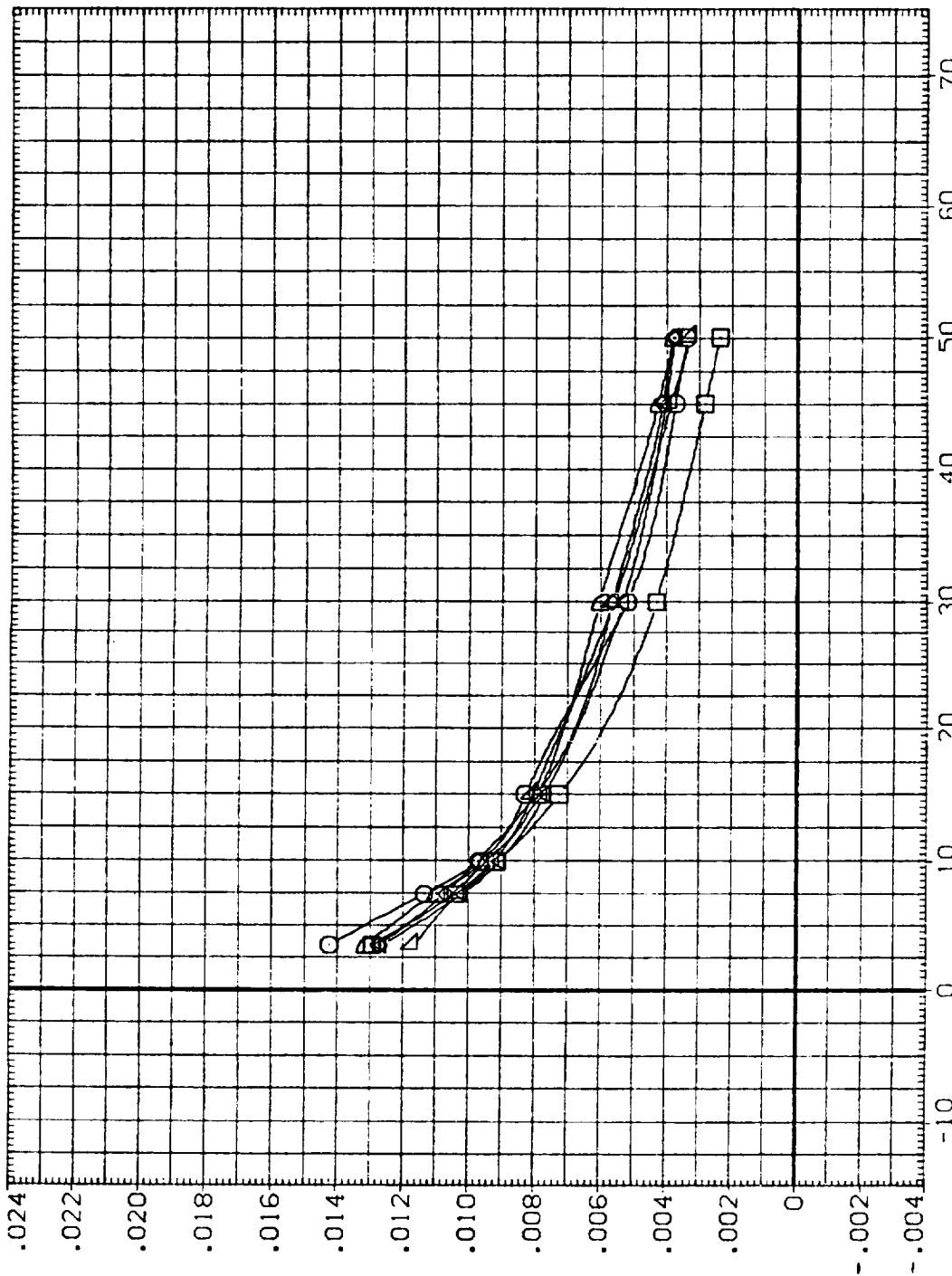


FIG. 29 EFFECT OF CARRIER STAB ON ORBITER(ORBITER ELEVONS AT 0.0 DEG., ORBITER T/C OFF)

(C)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORIB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA23B) 747/1 AT1 Q3S1	4 .000	.000	.600	-1 .000	SREF 2690 .0000 SO.FT.
(4NH020)	ARC 14-120(CA23B) 747/1 AT1 Q3S1	4 .000	.000	.600	-1 .000	LREF 474 .8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 Q3S1	6 .000	.000	.600	-1 .000	BREF 956 .6800 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 Q3S1	6 .000	.000	.600	-1 .000	XMRP 1109 .0000 IN.
(4NH025)	ARC 14-120(CA23B) 747/1 AT1 Q3S1	8 .000	.000	.600	-1 .000	YMRP .0000 IN.
(4NH022)	ARC 14-120(CA23B) 747/1 AT1 Q3S1	8 .000	.000	.600	5 .000	ZMRP 375 .0000 IN.
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 29 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB I/C OFF)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH020)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	4.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH023)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	.000	.600	5.000	YMRP 1109.0000 IN. X0
(4NH025)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	8.000	.000	.600	-1.000	ZMRP 375.0000 IN. Y0
(4NH022)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	8.000	.000	.600	5.000	SCALE .0125

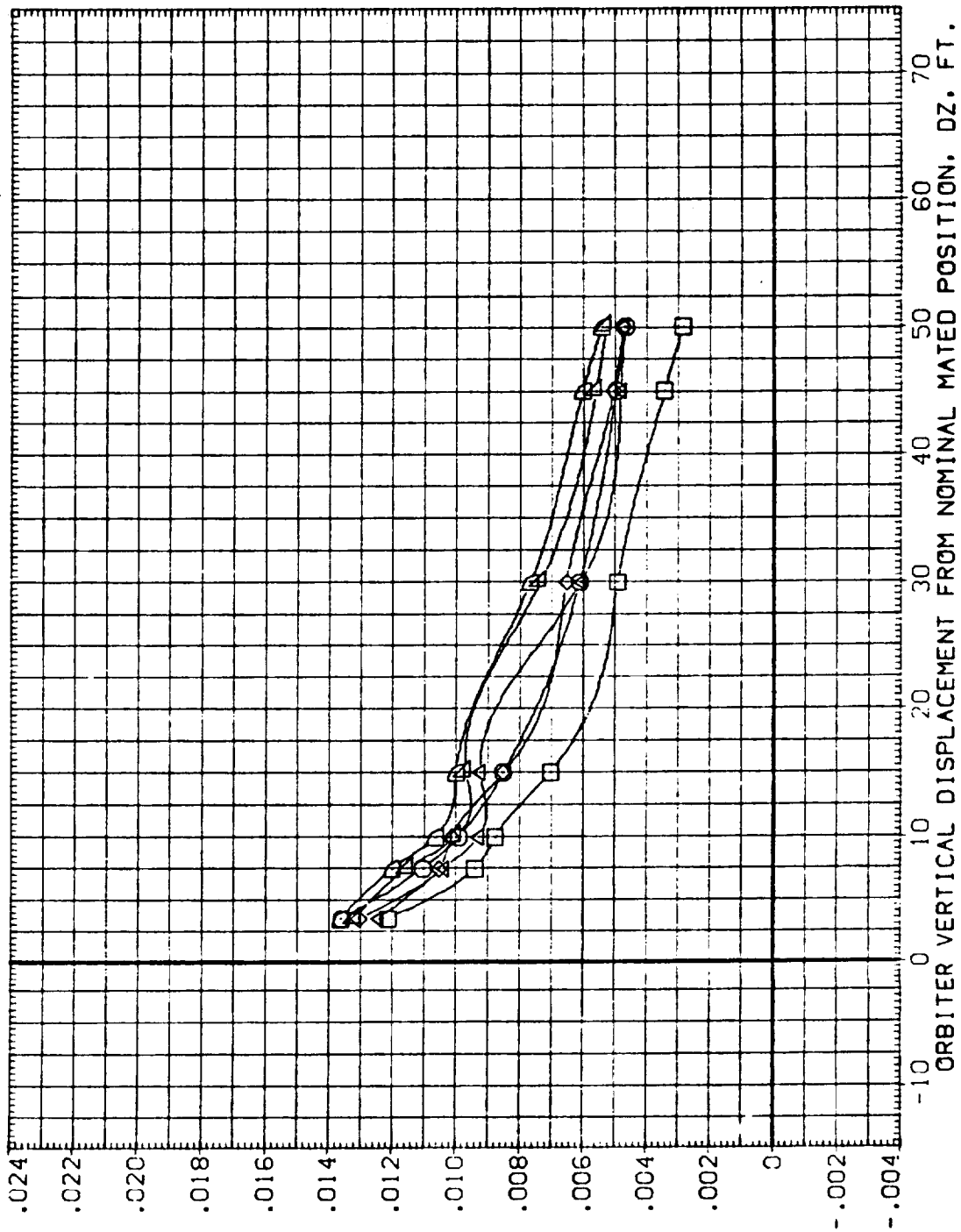


FIG. 29 EFFECT OF CARRIER STAB ON ORBITER(ORBITER ORBITER AT 0.0 DEG., ORBITER T/C OFF)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH021)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	-1.000	SREF 2690.0000 50. FT.
(4NH020)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	XMRP 1109.0000 IN. X0
(4NH025)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	-1.000	YMRP .0000 IN. Y0
(4NH022)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	5.000	ZMRP 375.0000 IN. Z0
						SCALE .0125

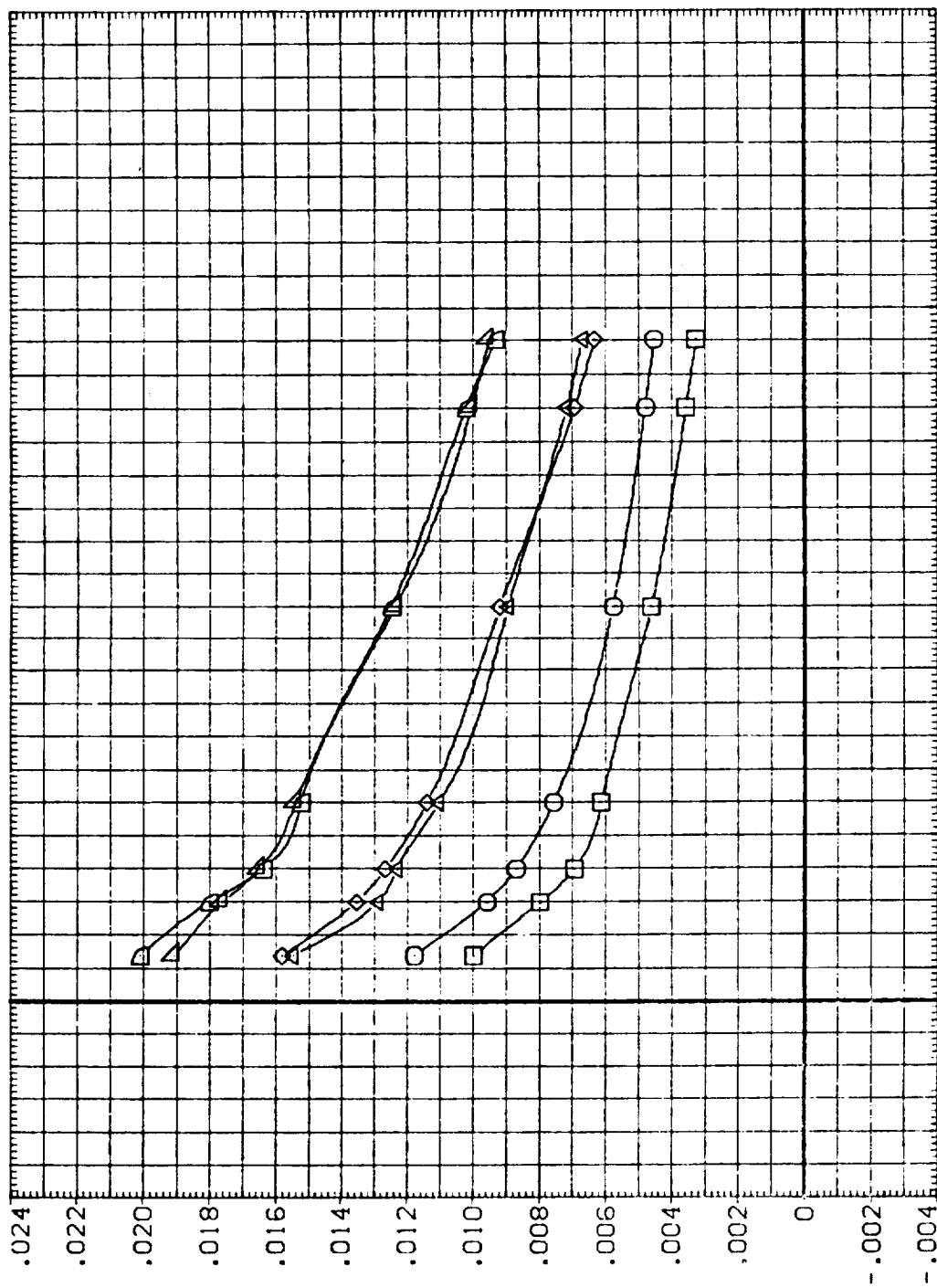


FIG. 29 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C OFF)  
 (C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH040)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH008)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN. XC
(PNH009)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	YMRP 190.7500 IN. YC
(PNH010)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	5.000	.600	5.000	ZMRP 190.7500 IN. ZC
						SCALE .0125

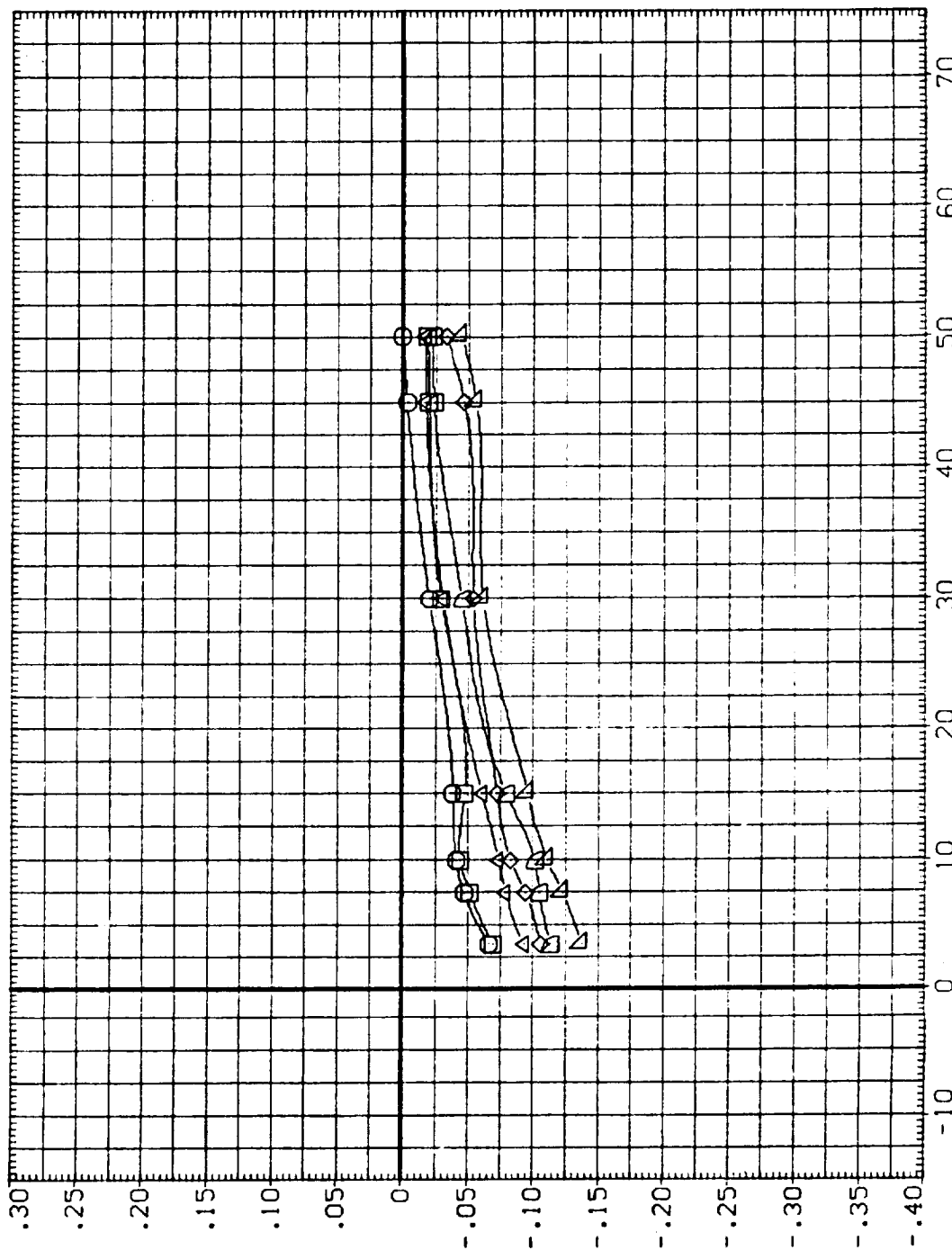


FIG. 30 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOBB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH040)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	LREF 327.7800 IN.
(PNH008)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	XMRP 1339.9000 IN. XC
(PNH009)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	YMRP .0000 IN. YC
(PNH010)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	8.000	5.000	.600	5.000	ZMRP 190.7500 IN. ZC
						SCALE .0125

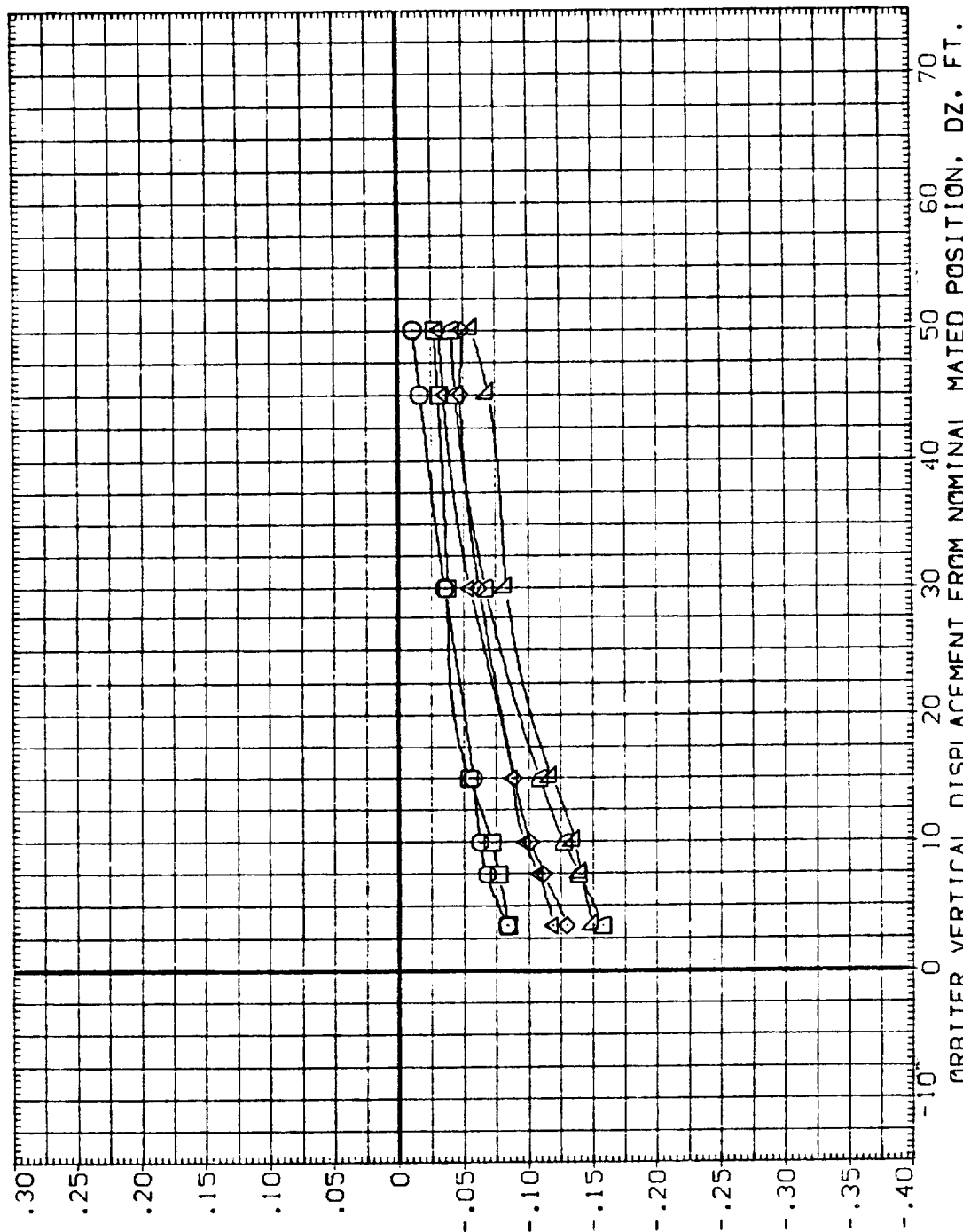


FIG. 30 EFFECT OF CARRIER STAB ON CARRIER ORB ELEVONS AT 5.0 DEG., ORB 1/C OFF)  
(B)ALPHAC= 2.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA23B) 747/1 AT1	4.000	5.000	.600	-1.000	SREF 5500.0000 50. FT.
(PNH040)	ARC 14-120(CA23B) 747/1 AT1	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1	6.000	5.000	.600	-1.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1	6.000	5.000	.600	5.000	XMRP 1339.9000 IN. XC
(PNH009)	ARC 14-120(CA23B) 747/1 AT1	8.000	5.000	.600	-1.000	YMRP .0000 IN. YC
(PNH010)	ARC 14-120(CA23B) 747/1 AT1	8.000	5.000	.600	5.000	ZMRP 190.7500 IN. ZC
						SCALE .0125

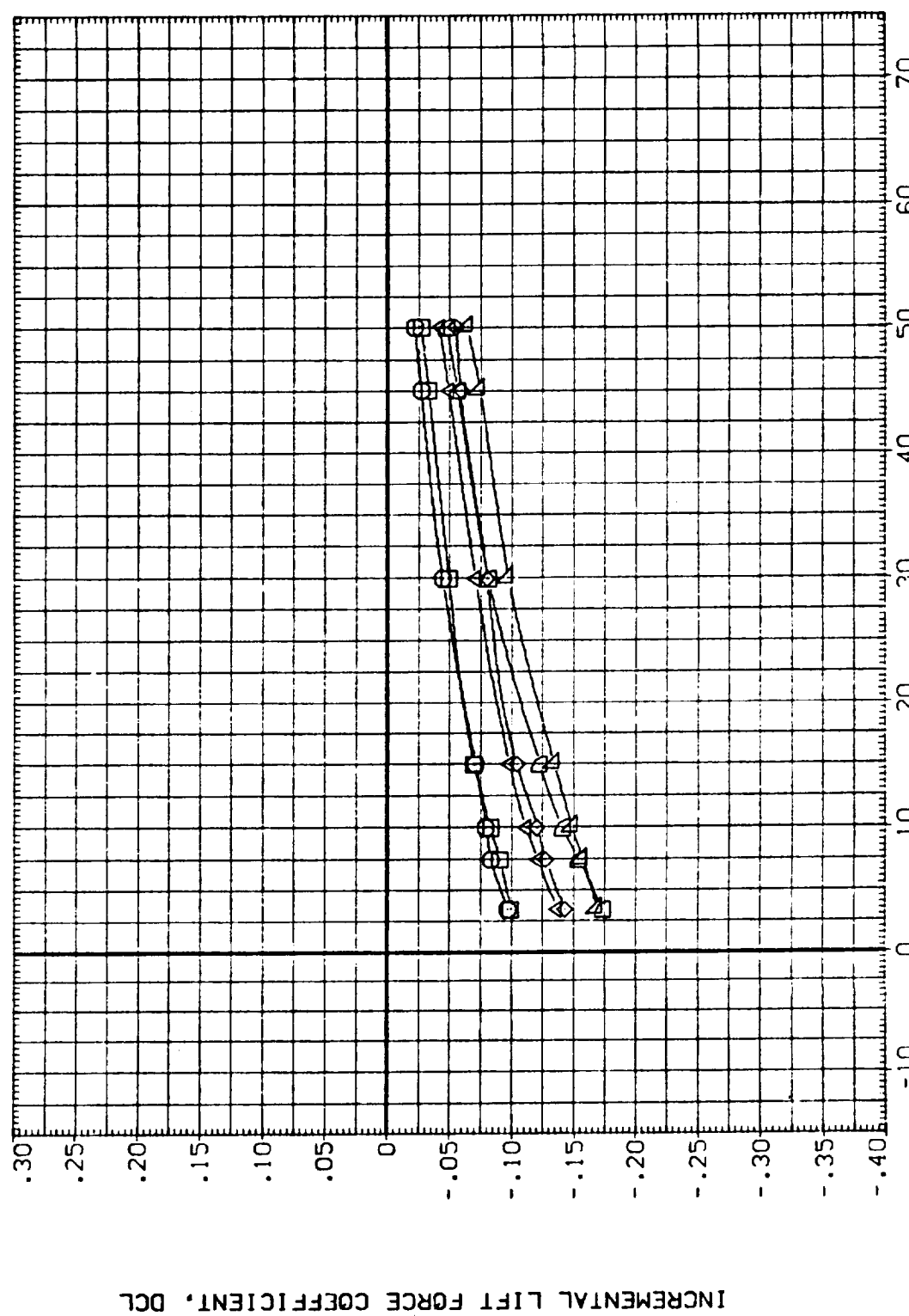


FIG. 30 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)

(C)ALPHAC= 4.00

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INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	-1.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN. XC
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	8.000	5.000	.600	-1.000	ZMRP .0000 IN. ZC
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	8.000	5.000	.600	5.000	SCALE .0125

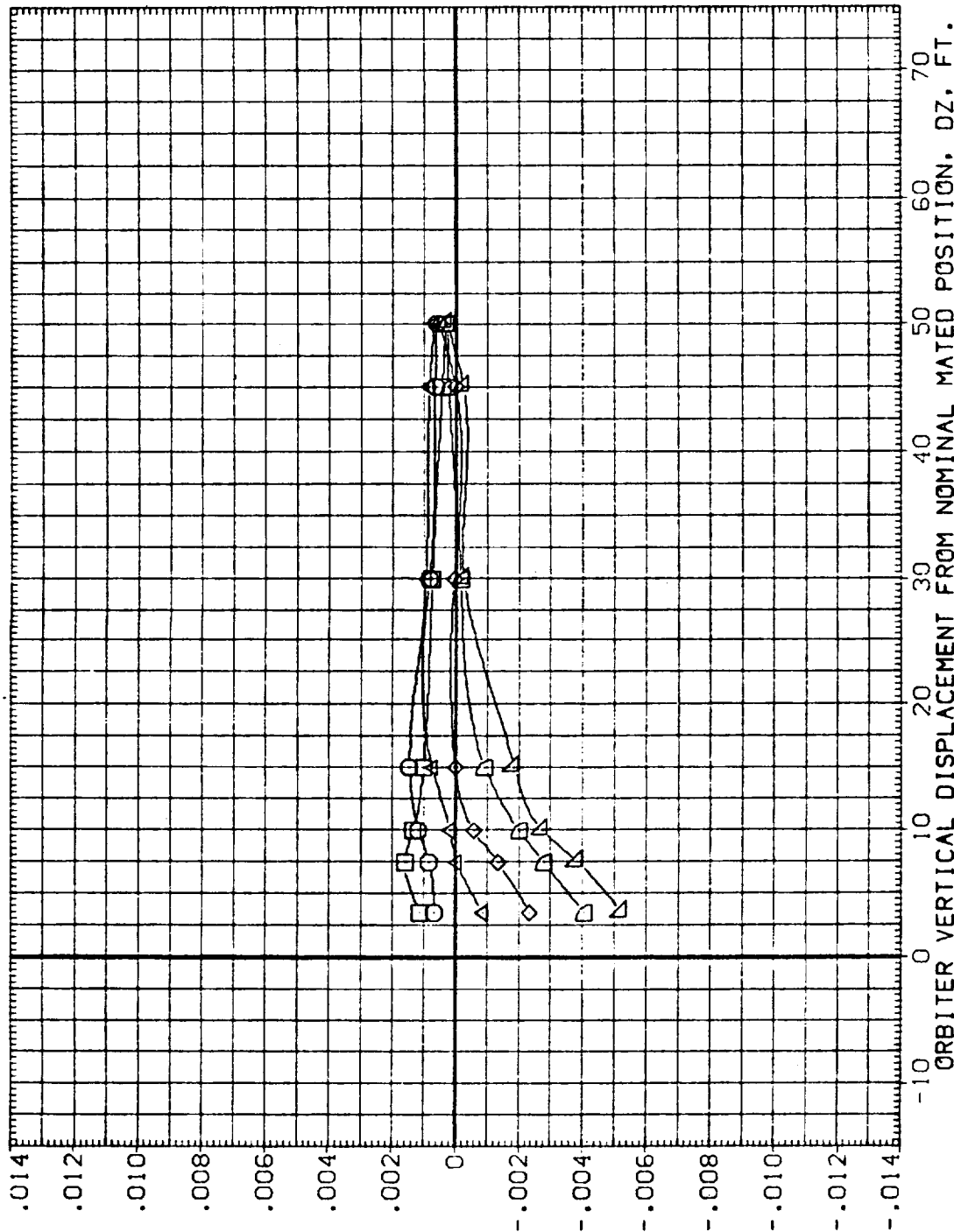
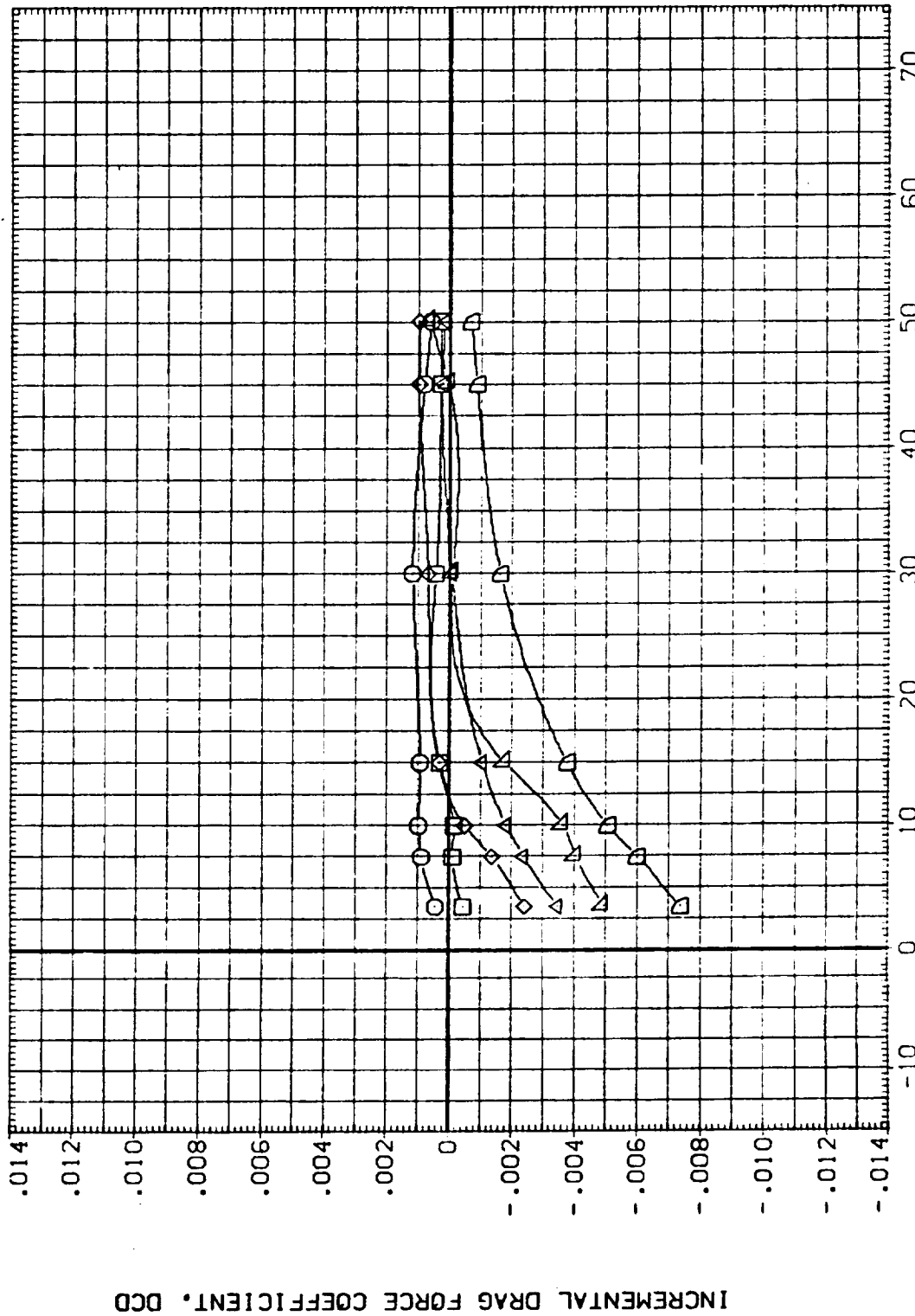


FIG. 30 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IO RB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH040)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH008)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	BREF 2348.0400 IN. XC
(PNH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	YMRP .0000 IN. YC
(PNH009)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	ZMRP 190.7500 IN. ZC
(PNH010)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, OZ, FT.

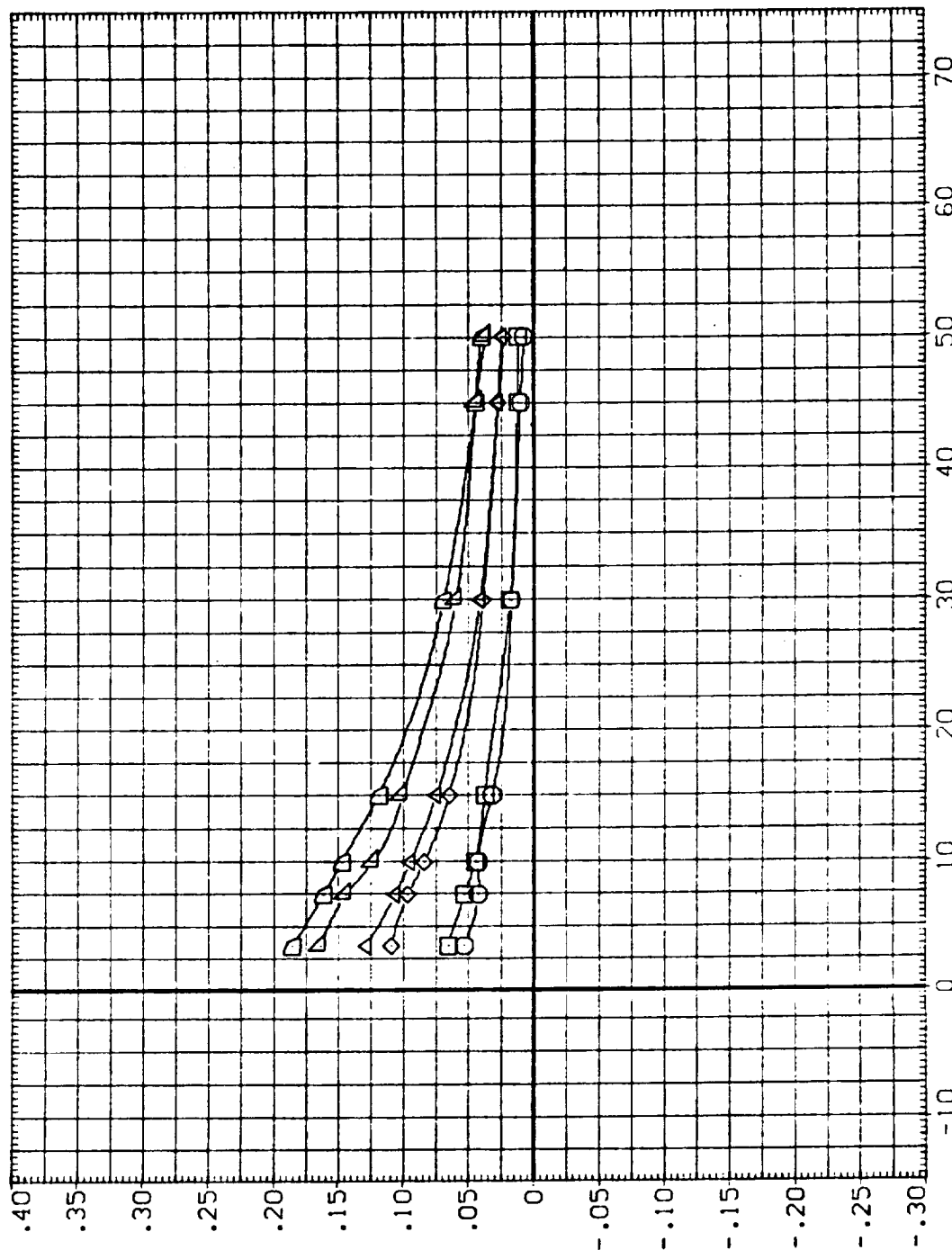
FIG. 30 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)

(B)ALPHAC= 2.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN.
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	YMRP .0000 IN.
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	ZMRP 190.7500 IN.
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 30 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNHC11)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNHC43)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	LREF 327.7800 IN.
(PNHC08)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	BREF 2348.0400 IN.
(PNHC13)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	XMRP 1339.9000 IN.
(PNHC09)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	YMRP .0000 IN.
(PNHC10)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	ZMRP 190.7500 IN.
						SCALE .0125

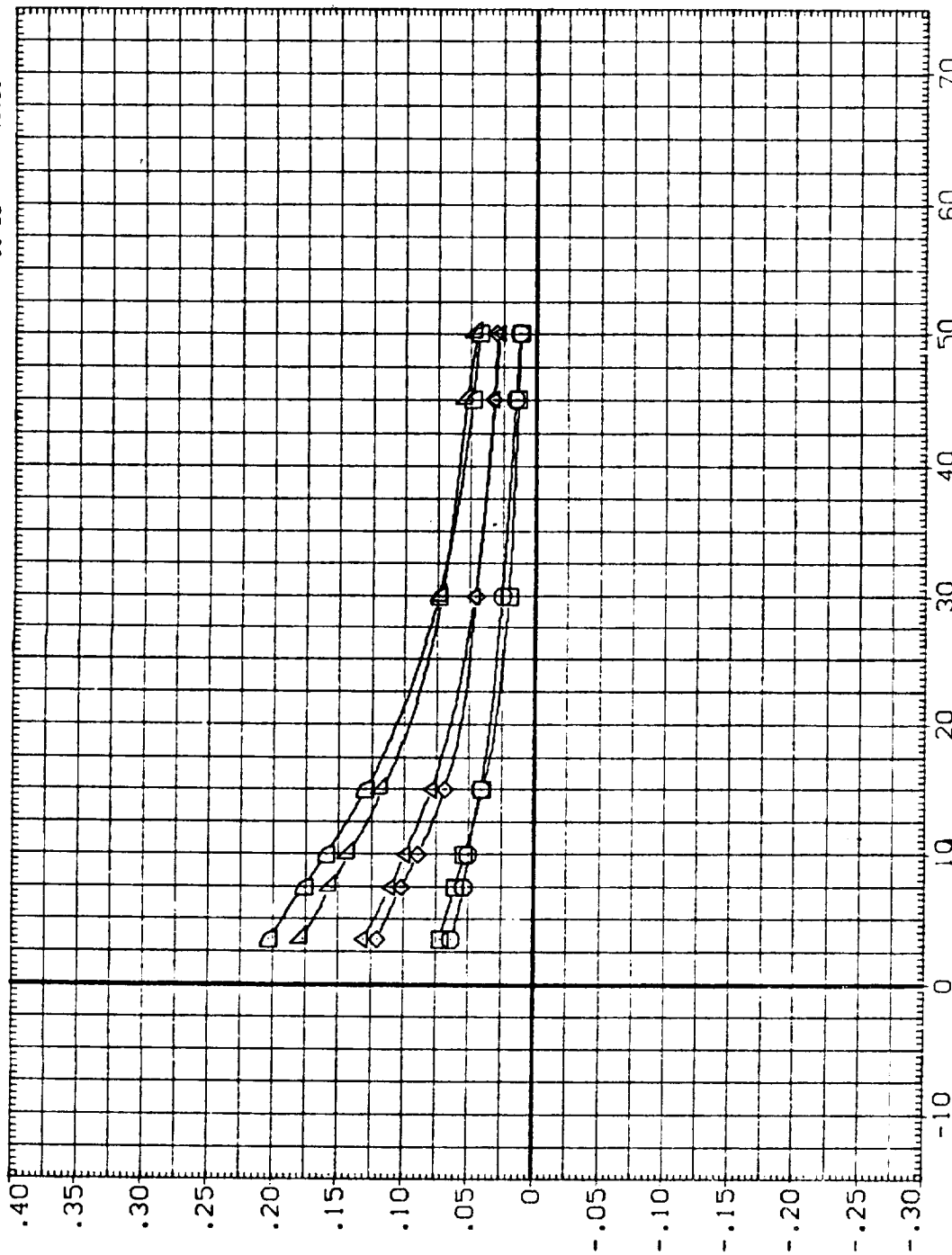


FIG. 30 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)  
 (B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(PNH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	-1.000	SREF	5500.0000 SQ.FT.
(PNH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	4.000	5.000	.600	5.000	LREF	327.7800 IN.
(PNH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	-1.000	BREF	2348.0400 IN. XC
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	-1.000	YMRP	1339.9000 IN. YC
(PNH009)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	ZMRP	190.7500 IN. ZC
(PNH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	8.000	5.000	.600	5.000	SCALE	.0125

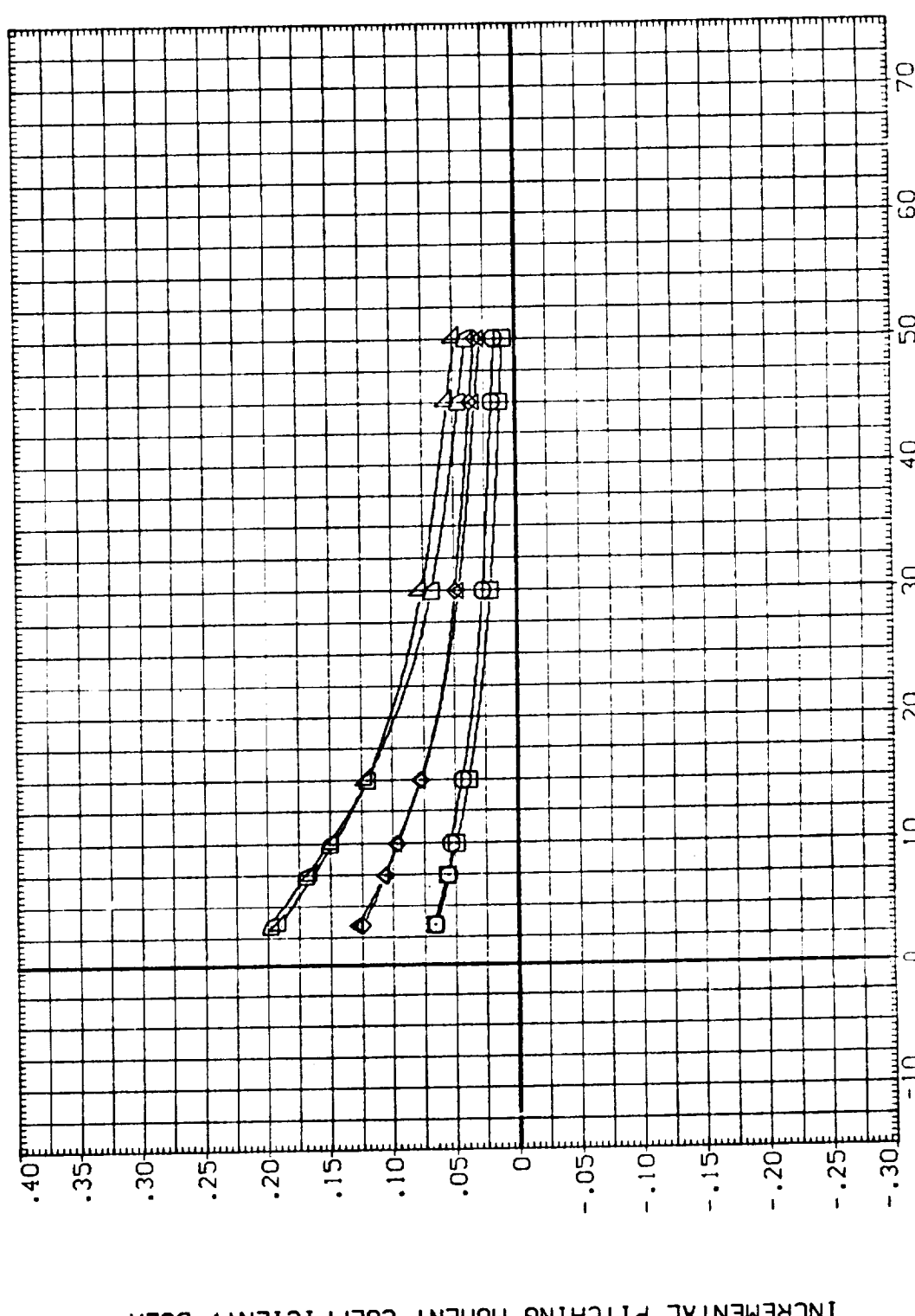


FIG. 30 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)

(C)ALPHAC= 4.00

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INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	-1.000	LREF 474.8100 IN.
(4NH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	-1.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP 1109.0000 IN. X0
(4NH009)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	-1.000	YMRP .0000 IN. Y0
(4NH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	5.000	ZMRP 375.0000 IN. Z0
						SCALE .0125

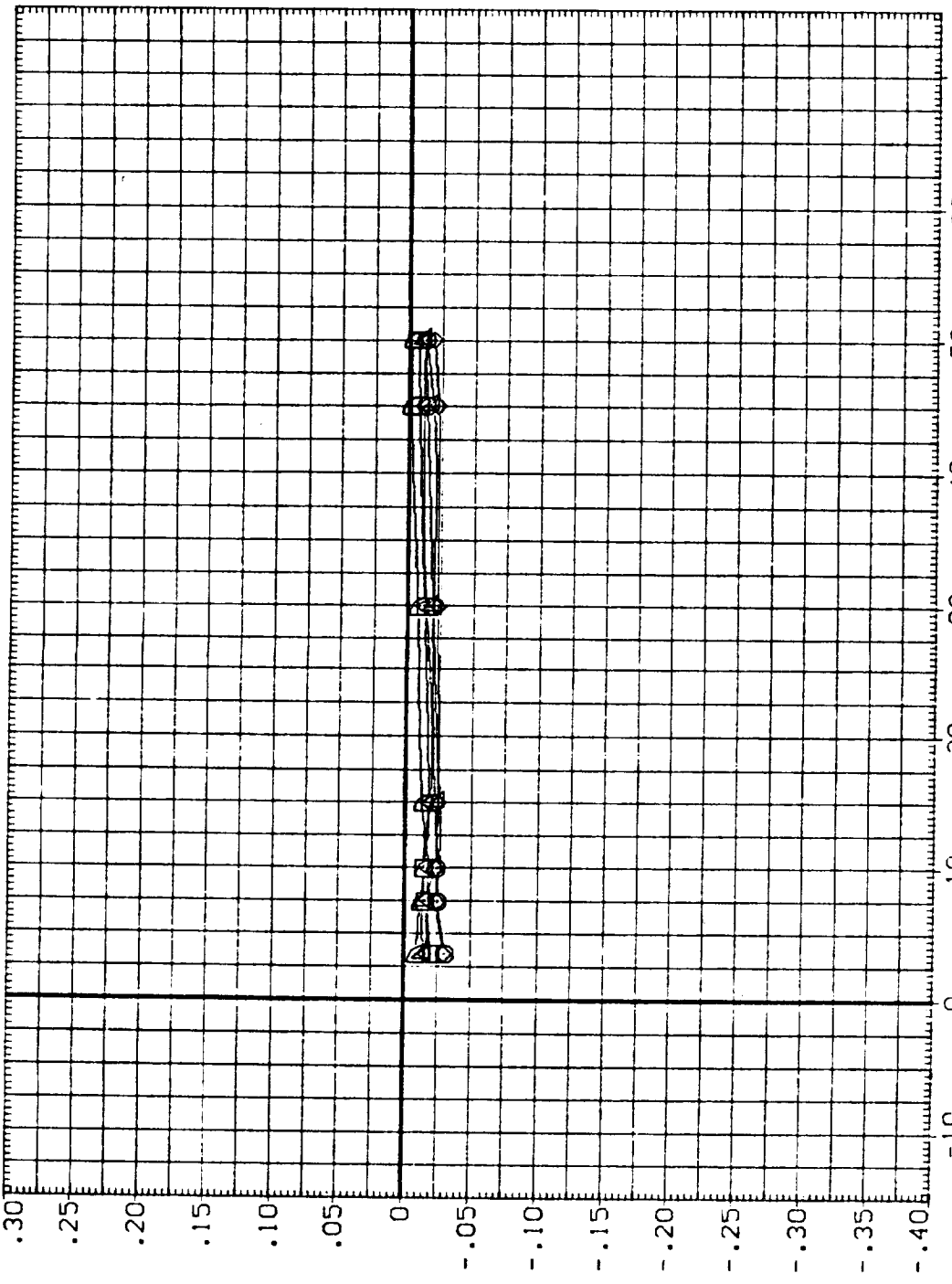


FIG. 31 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)  
(A)ALPHAC= .00





DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH011)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH040)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH008)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	-1.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP 1109.0000 IN. X0
(4NH009)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	-1.000	YMRP .0000 IN. Y0
(4NH010)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	5.000	ZMRP 375.0000 IN. Z0
						SCALE .0125

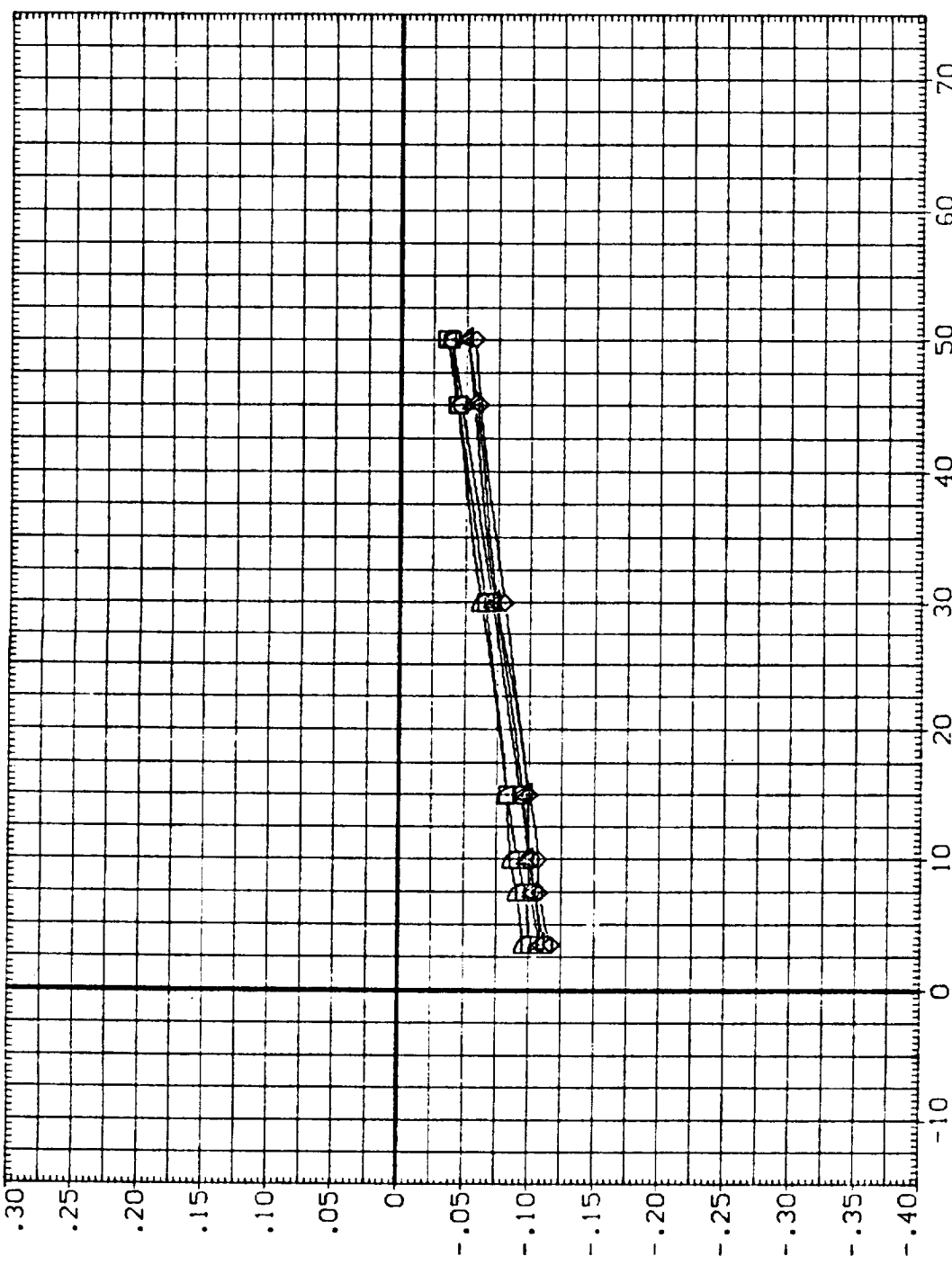


FIG. 31 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)  
(C)ALPHAC= 4.00 PAGE 240

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	-1.000	SREF	2690.0000 SQ.FT.
(4NH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	-1.000	LREF	474.8100 IN.
(4NH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	-1.000	BREF	936.6800 IN.
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	-1.000	YMRP	1109.0000 IN. X0
(4NH009)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	-1.000	ZMRP	375.0000 IN. Y0
(4NH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	-1.000	SCALE	.0125

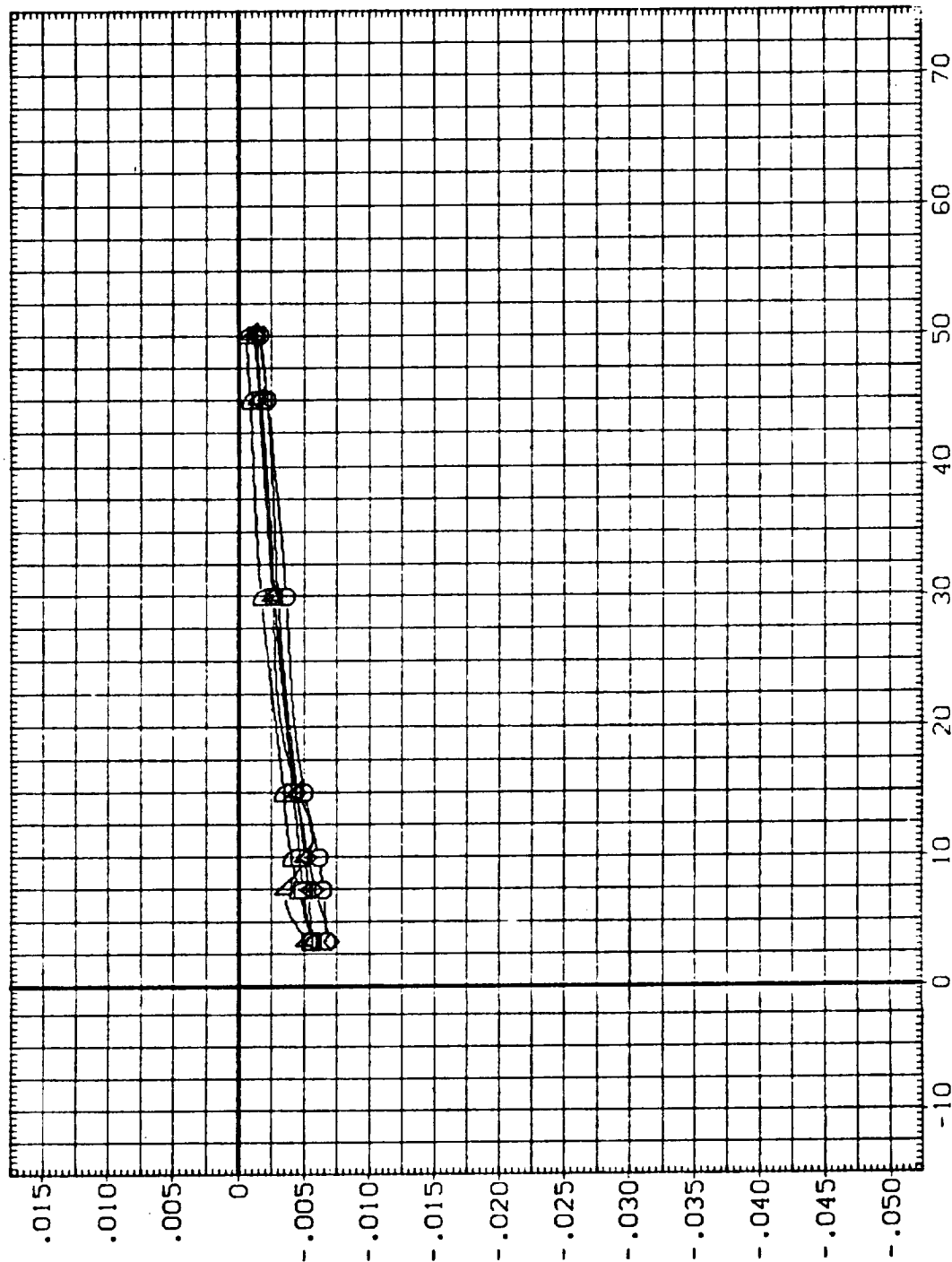


FIG. 31 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL  
(4NH011)  
(4NH040)  
(4NH008)  
(4NH013)  
(4NH009)  
(4NH010)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)

IORB  
4.000  
4.000  
6.000  
6.000  
8.000  
8.000

ELEVON  
5.000  
5.000  
5.000  
5.000  
5.000  
5.000

MACH  
.600  
.600  
.600  
.600  
.600  
.600

STAB  
-1.000  
5.000  
-1.000  
5.000  
-1.000  
5.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

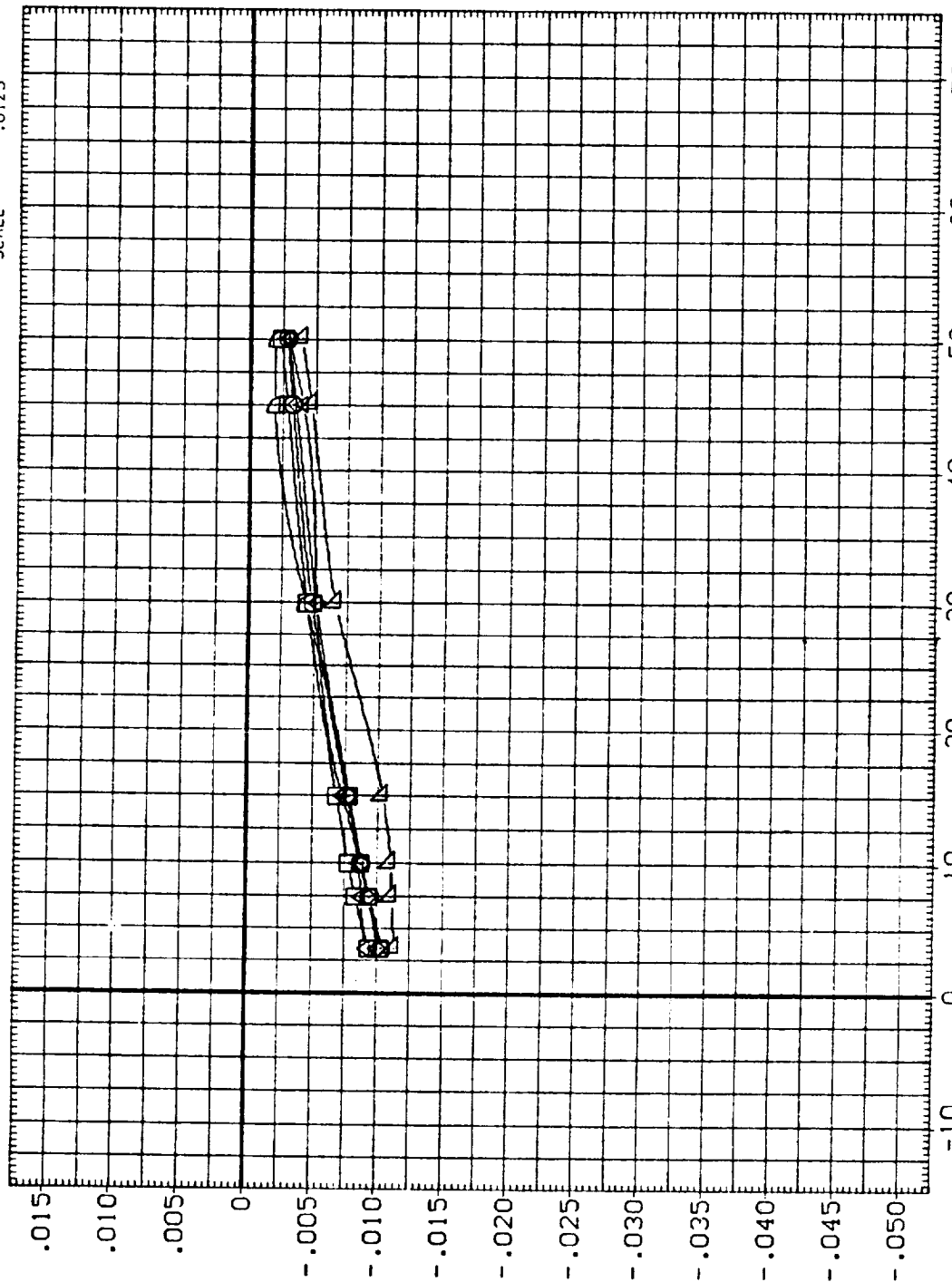


FIG. 31 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)  
(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH011)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	-1.000	SREF	2690.0000 SO.FT.
(4NH040)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	4.000	5.000	.600	5.000	LREF	474.8100 IN.
(4NH008)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	-1.000	BREF	936.6800 IN.
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	XRRP	1109.0000 IN. X0
(4NH003)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	-1.000	YRRP	375.0000 IN. Y0
(4NH010)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	8.000	5.000	.600	5.000	ZRRP	375.0000 IN. Z0
						SCALE	.0125

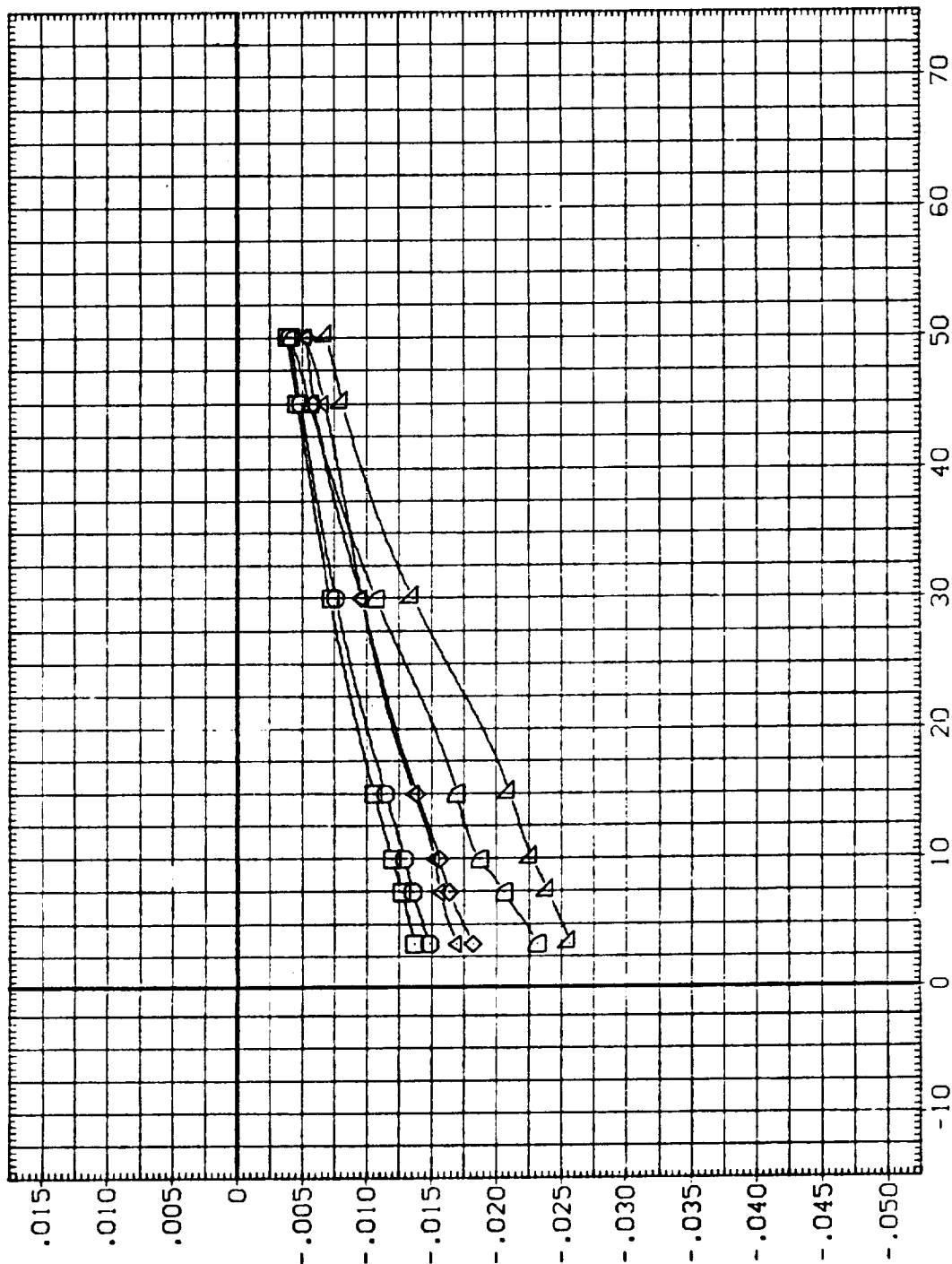
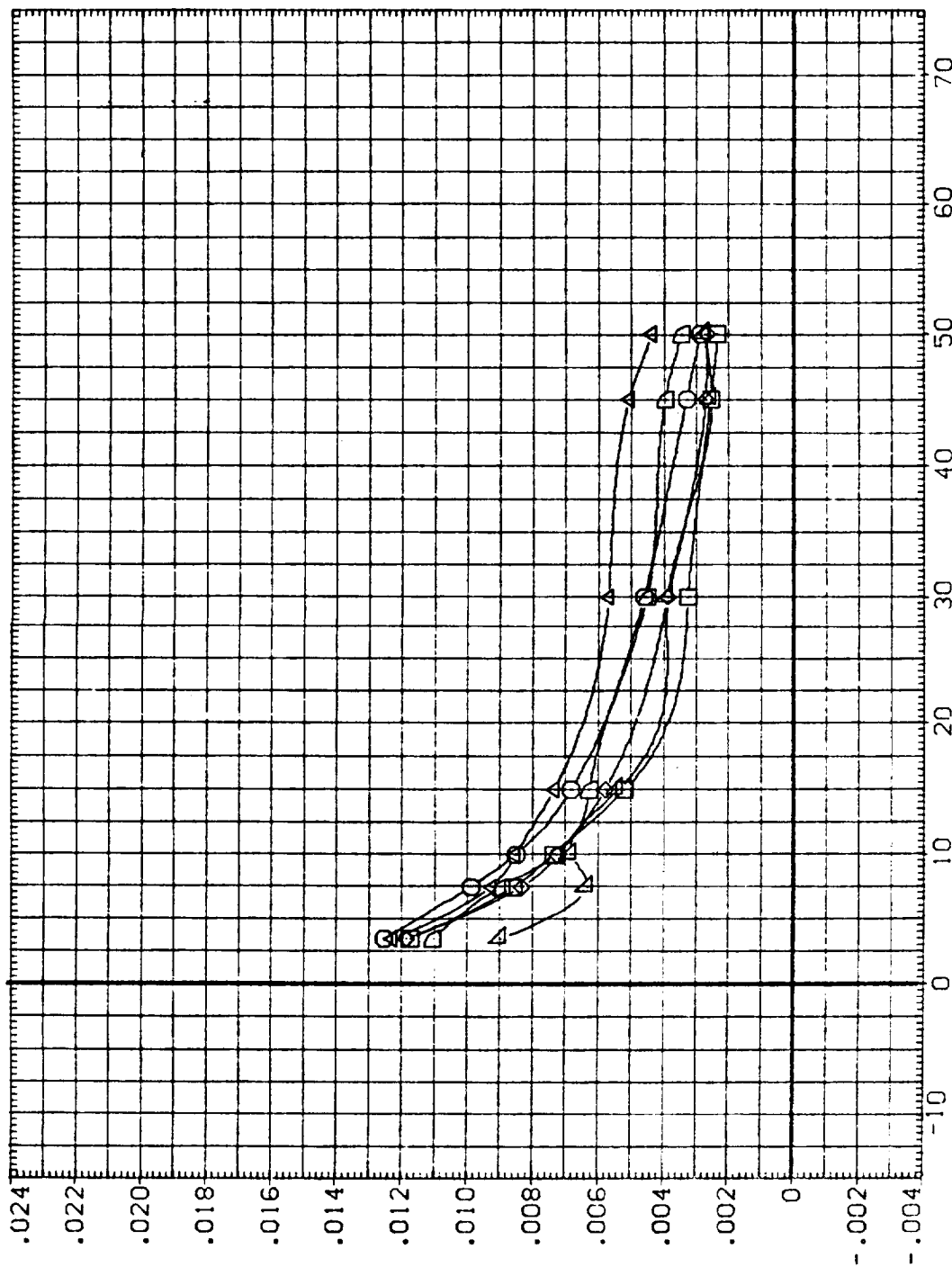


FIG. 31 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(4NH011)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.600	-1.000	SREF	2690.0000	50. FT.	
(4NH040)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	4.000	5.000	.600	5.000	LREF	474.8100	IN.	
(4NH008)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	-1.000	BREF	936.6800	IN.	X0
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	5.000	YMRP	1109.0000	IN.	Y0
(4NH009)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	8.000	5.000	.600	-1.000	ZMRP	375.0000	IN.	Z0
(4NH010)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	8.000	5.000	.600	5.000	SCALE	.0125		



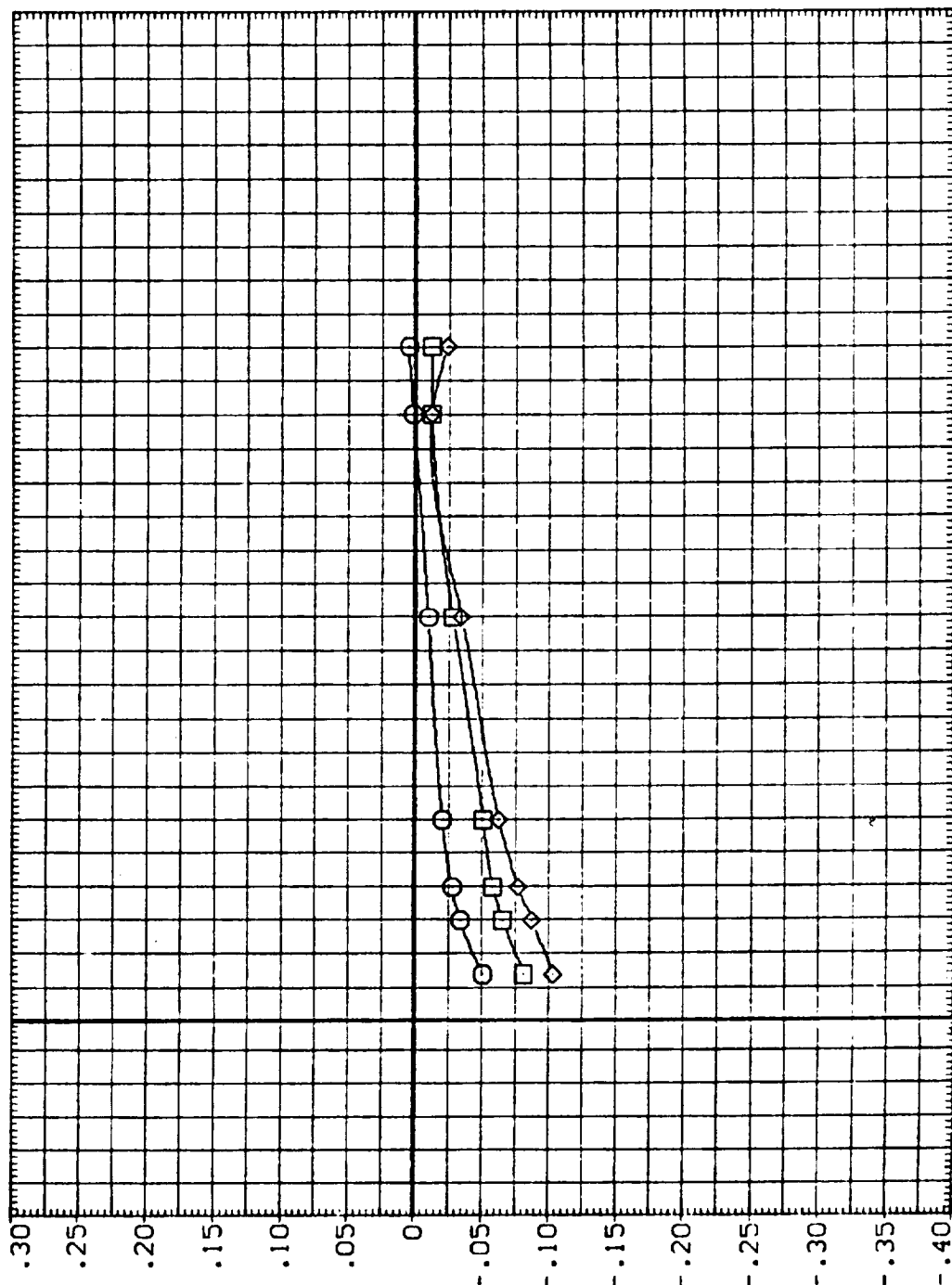
ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.  
 FIG. 31 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 5.0 DEG., ORB T/C OFF)  
 (A)ALPHAC= .00 PAGE 244







DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH035)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SO.FT.
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH027)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN. XC
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, OZ, FT.

FIG. 32 EFFECT OF ORB INCIDENCE ON CARRIER(CARRIER STAB= 5.0 DEG., ORB I/C ON)

(A)ALPHAC= .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(PNH035)  
(PNH034)  
(PNH027)

ARC 14-120(CA238)  
ARC 14-120(CA238)  
ARC 14-120(CA238)

747/1 AT1  
747/1 AT1  
747/1 AT1

Q351 (CARRIER DATA)  
Q351 (CARRIER DATA)  
Q351 (CARRIER DATA)

IORB  
4.000  
6.000  
8.000

ELEVON  
.000  
.000  
.000

MACH  
.600  
.600  
.600

STAB  
5.000  
5.000  
5.000

REFERENCE INFORMATION  
SREF 5500.0000 50. FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

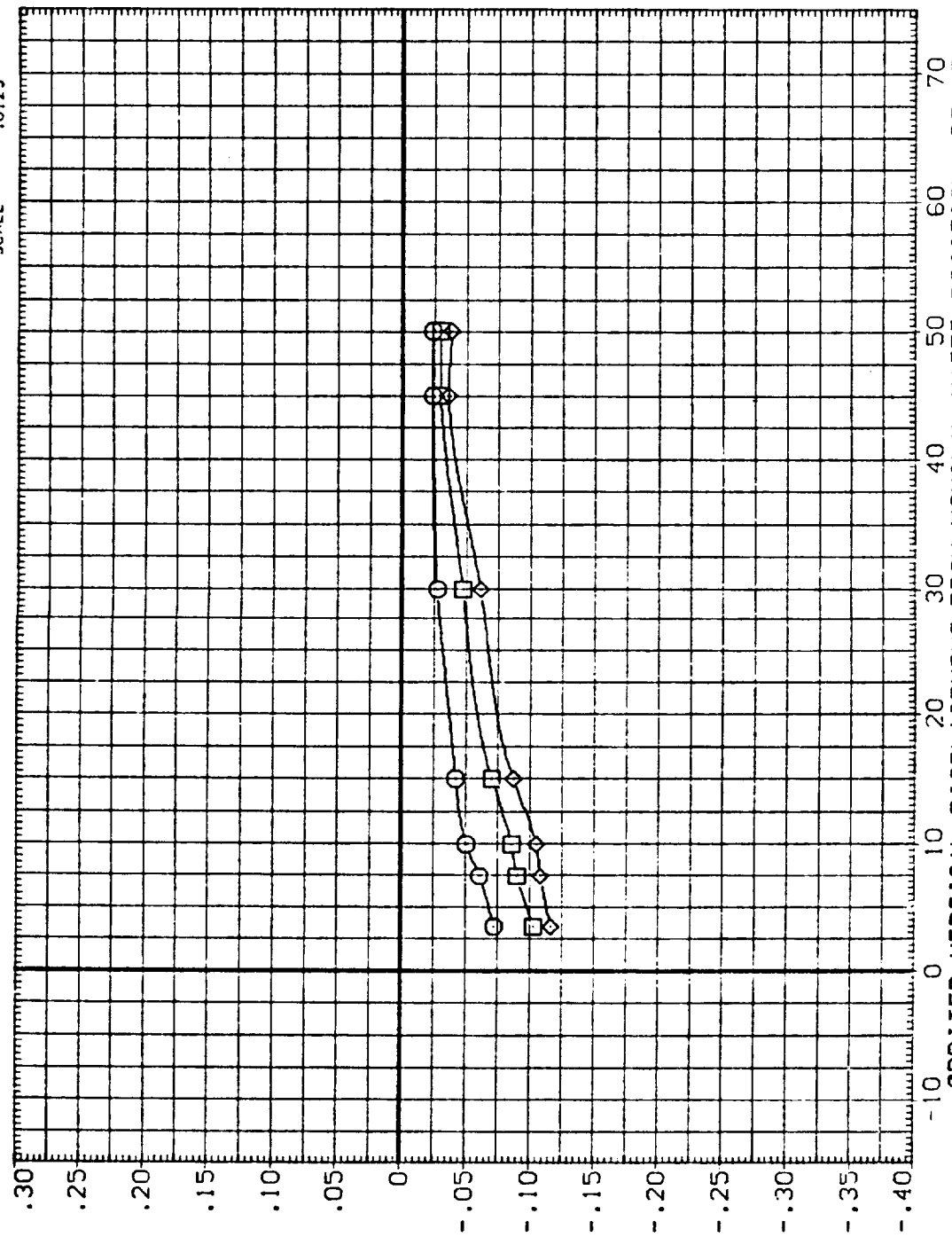


FIG. 32 EFFECT OF ORB INCIDENCE ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNHQ35)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ. FT.
(PNHQ34)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNHQ27)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

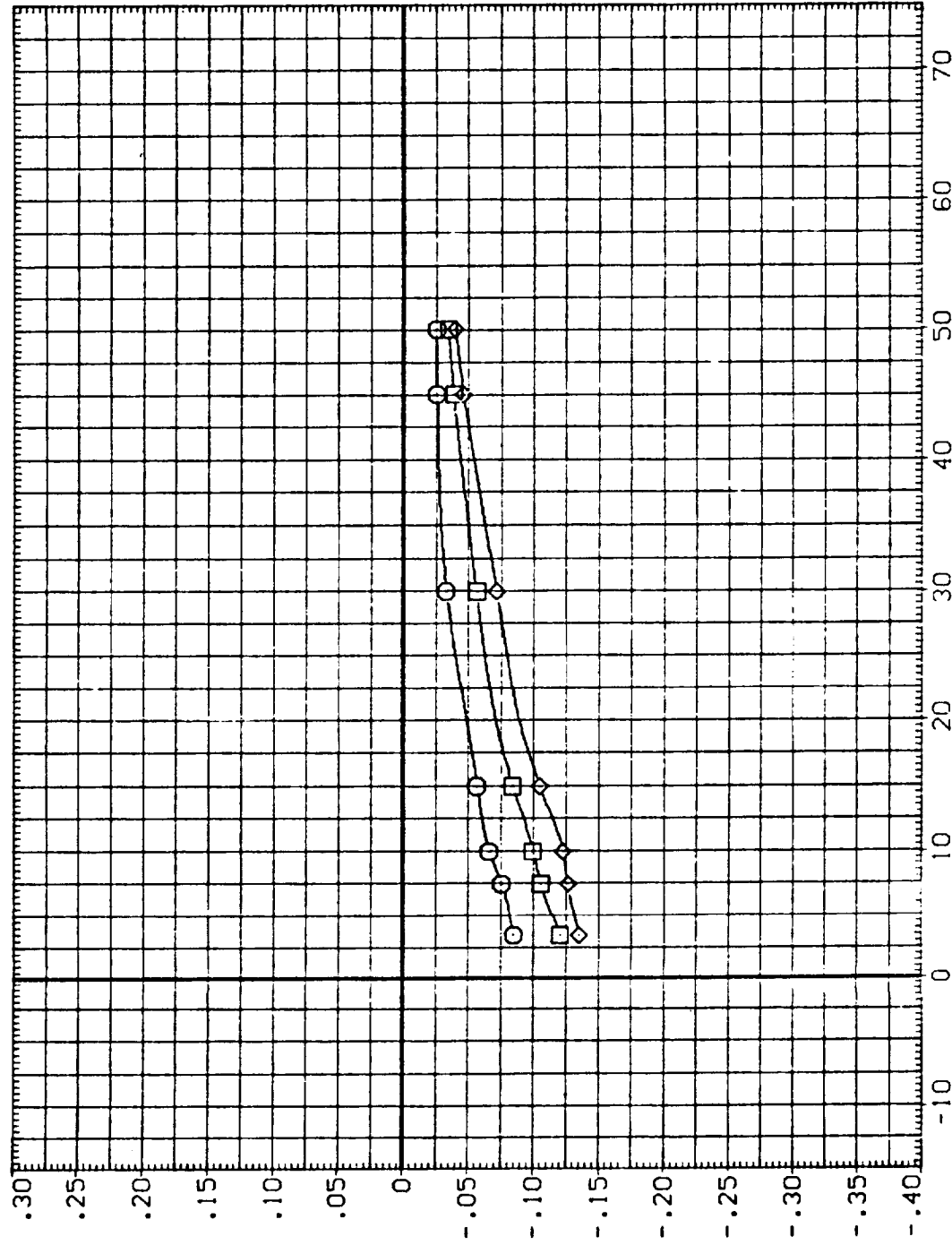


FIG. 32 EFFECT OF ORB INCIDENCE ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH035)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SCALE
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800
(PNH027)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400
						XMRP 1338.9000
						YMRP .0000
						ZMRP 190.7500
						SCALE .0125

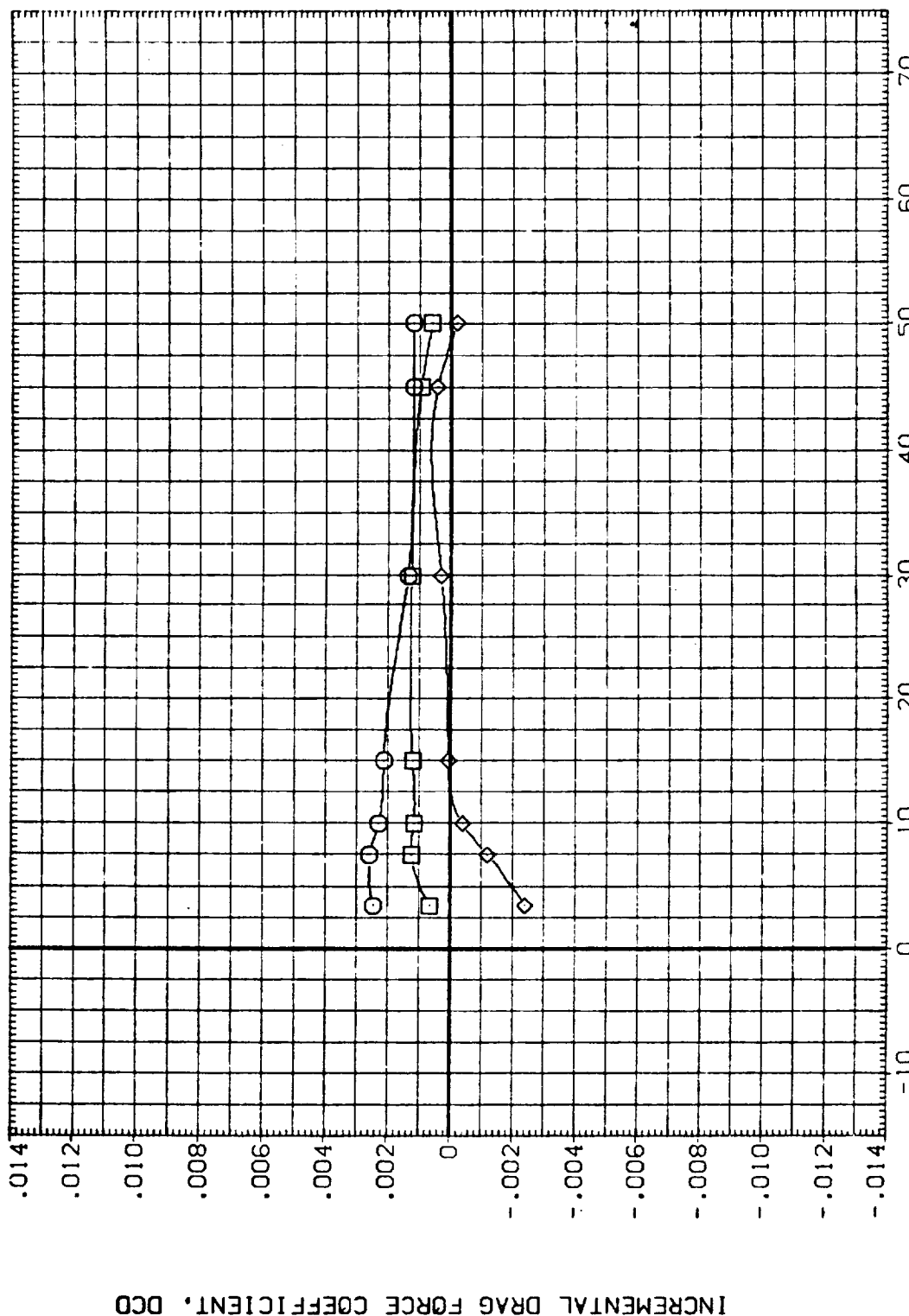


FIG. 32 EFFECT OF ORB INCIDENCE ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PINH035)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ. FT.
(PINH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PINH027)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

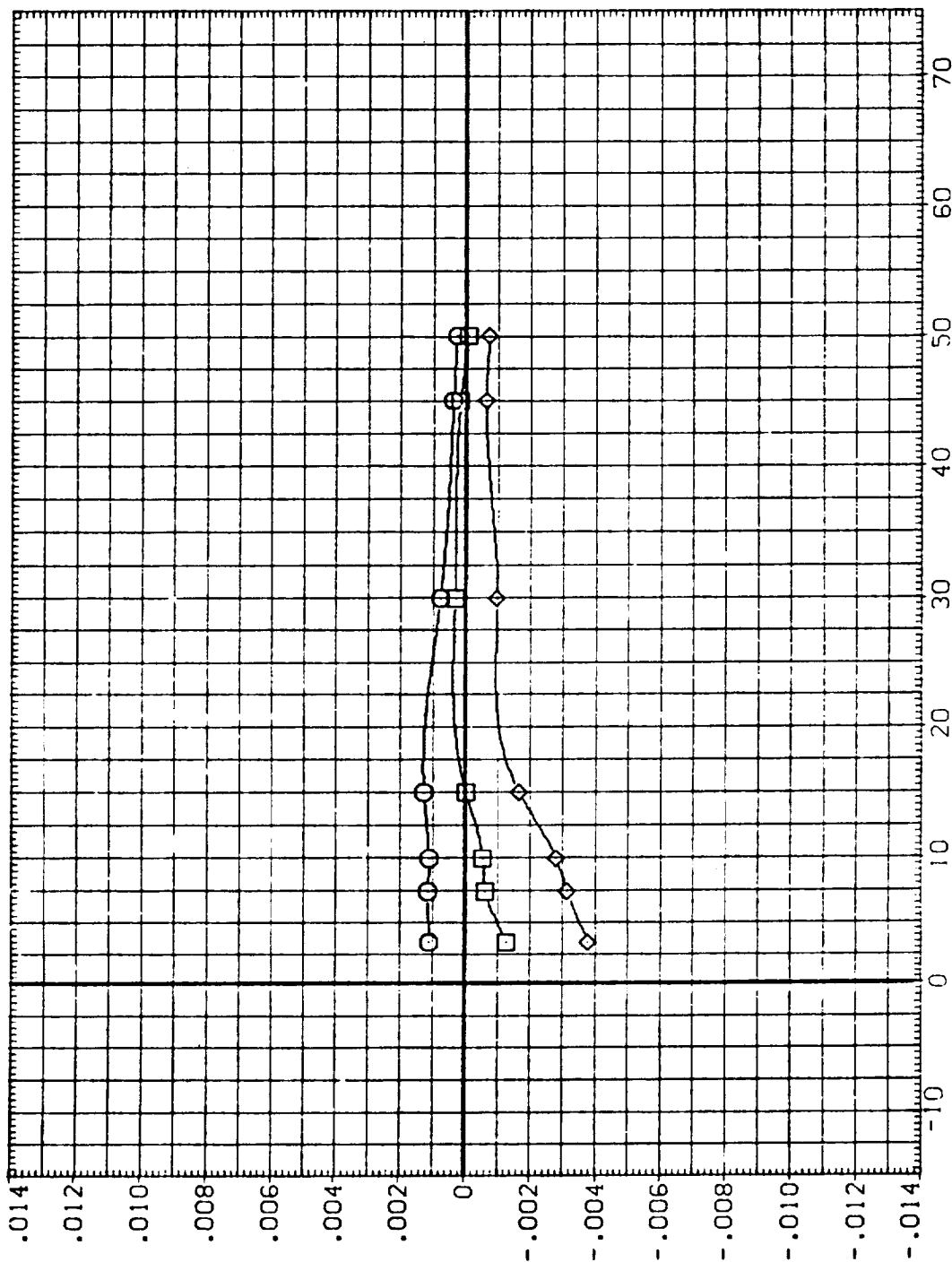


FIG. 32 EFFECT OF ORB INCIDENCE ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH035)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 50.FT.
(PNH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH027)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

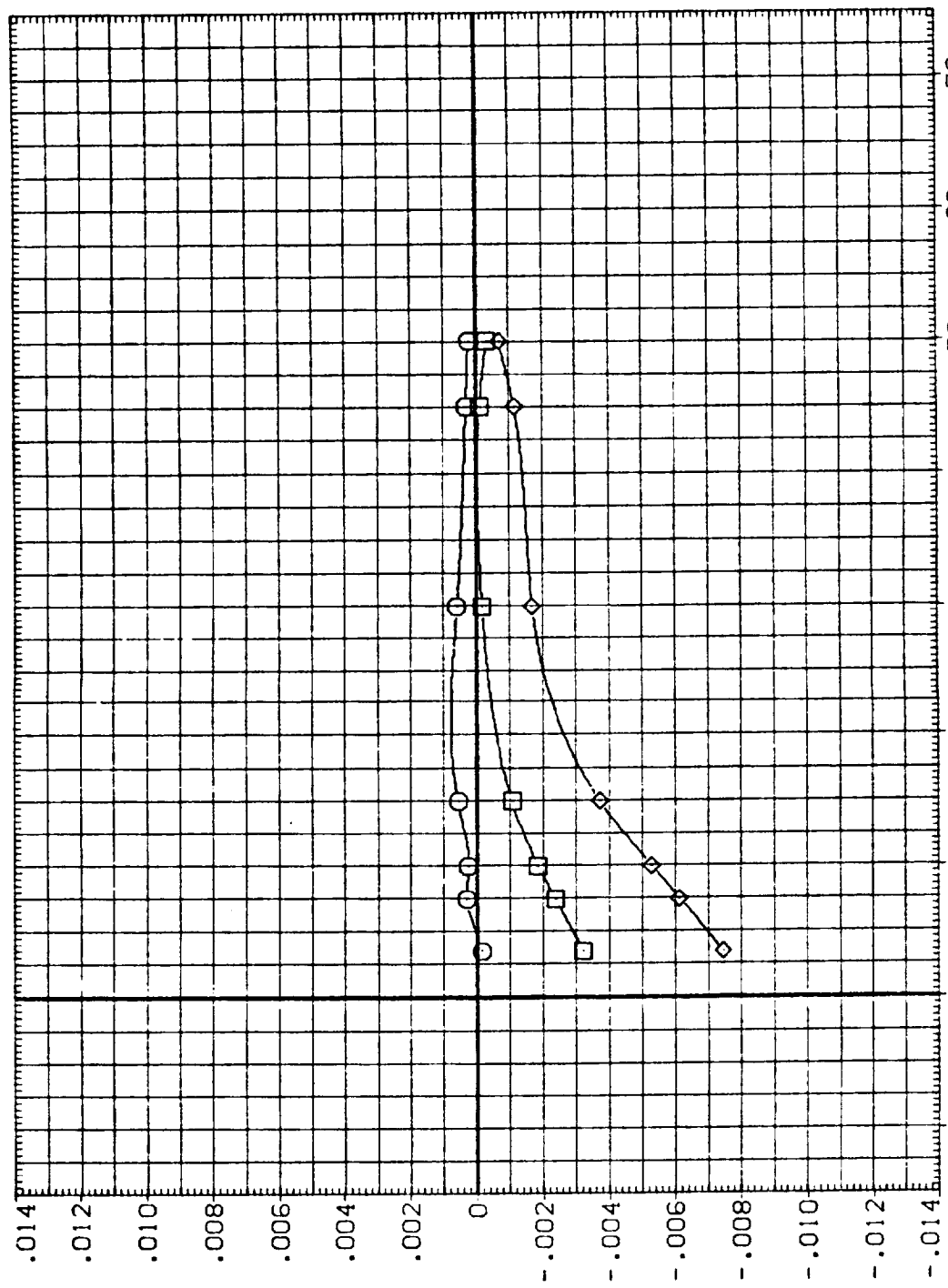
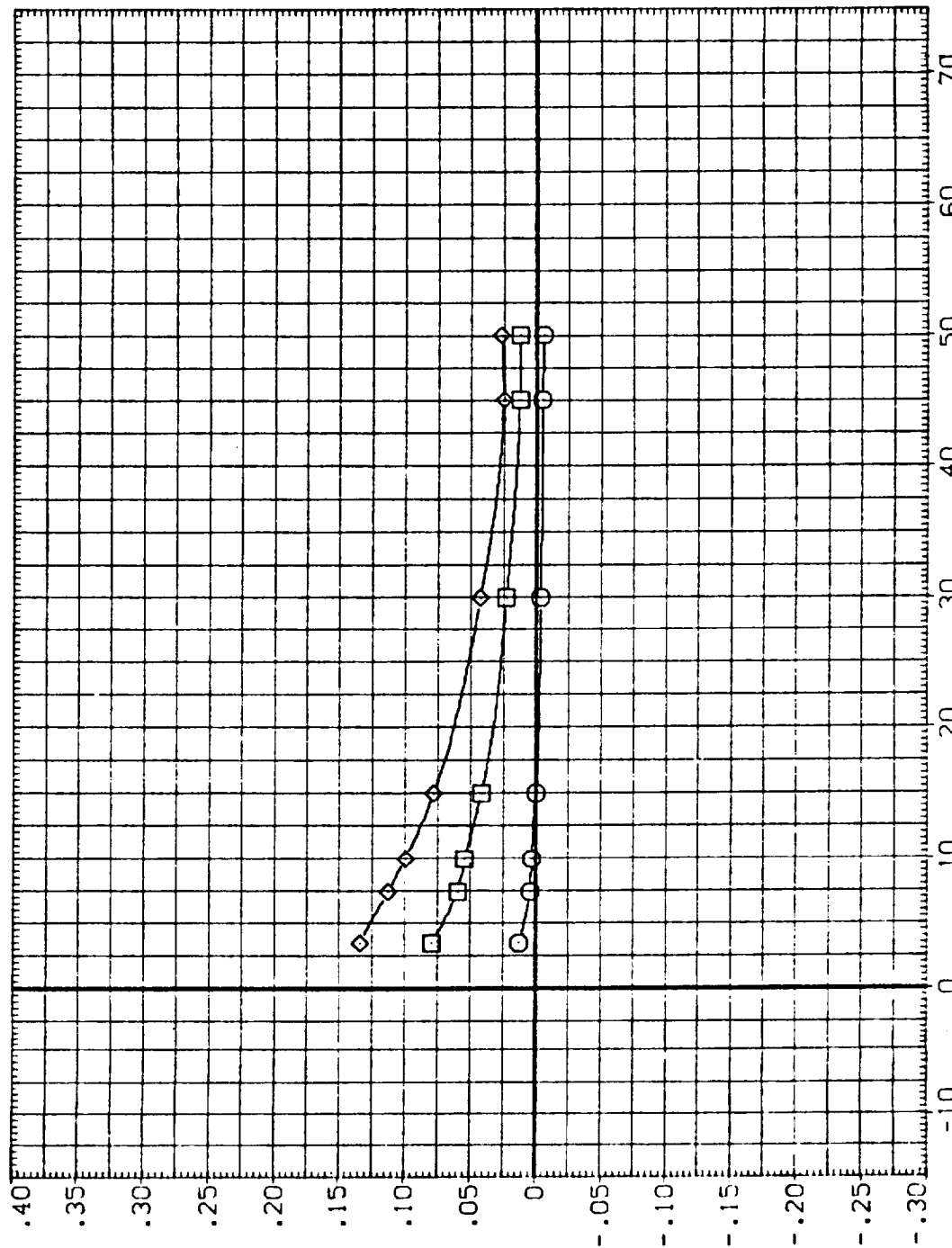


FIG. 32 EFFECT OF ORB INCIDENCE ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(C)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH035)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SO.FT.
(PNH034)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH027)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 32 EFFECT OF ORB INCIDENCE ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORB    ELEVON    MACH    STAB    REFERENCE INFORMATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH035)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH027)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

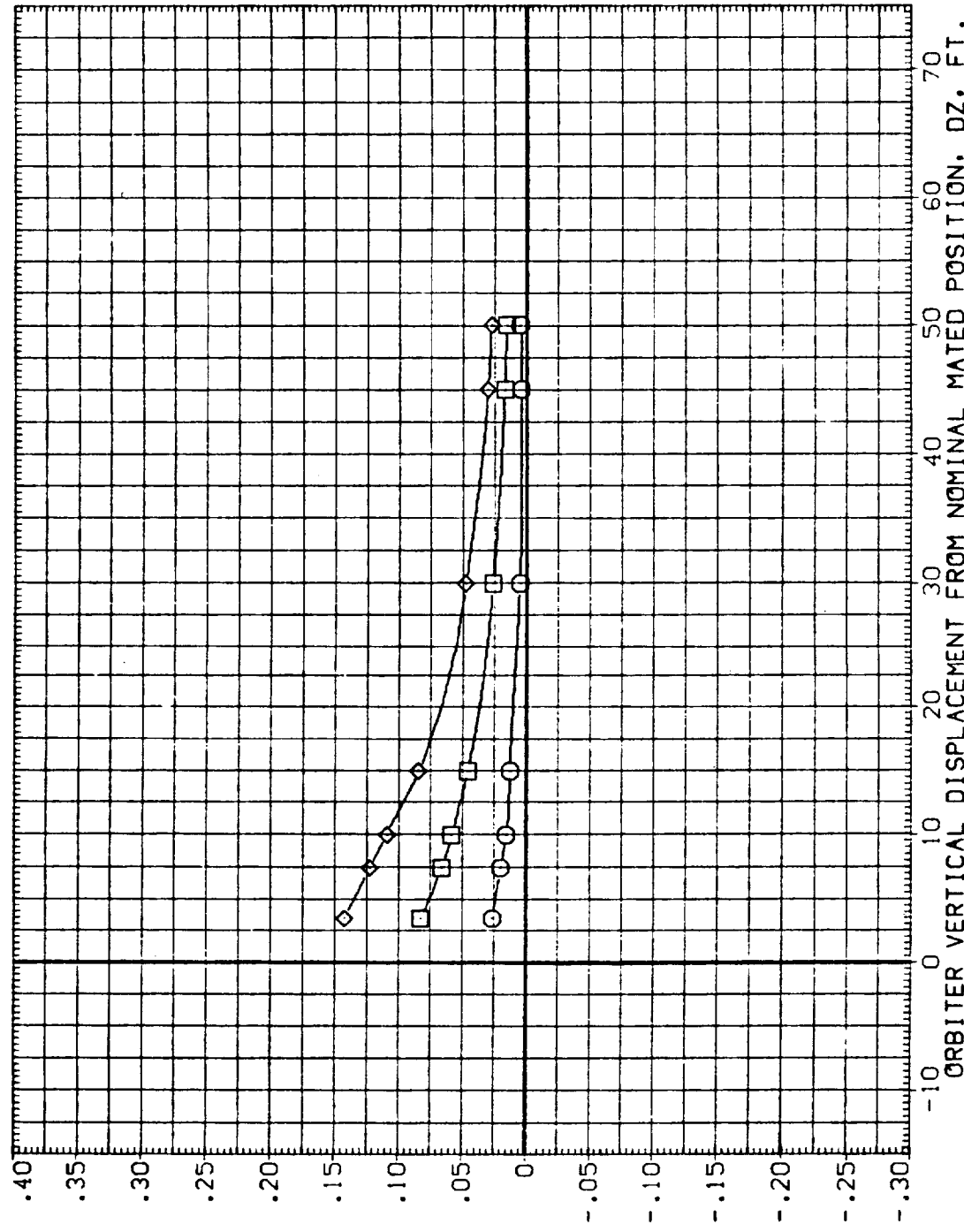
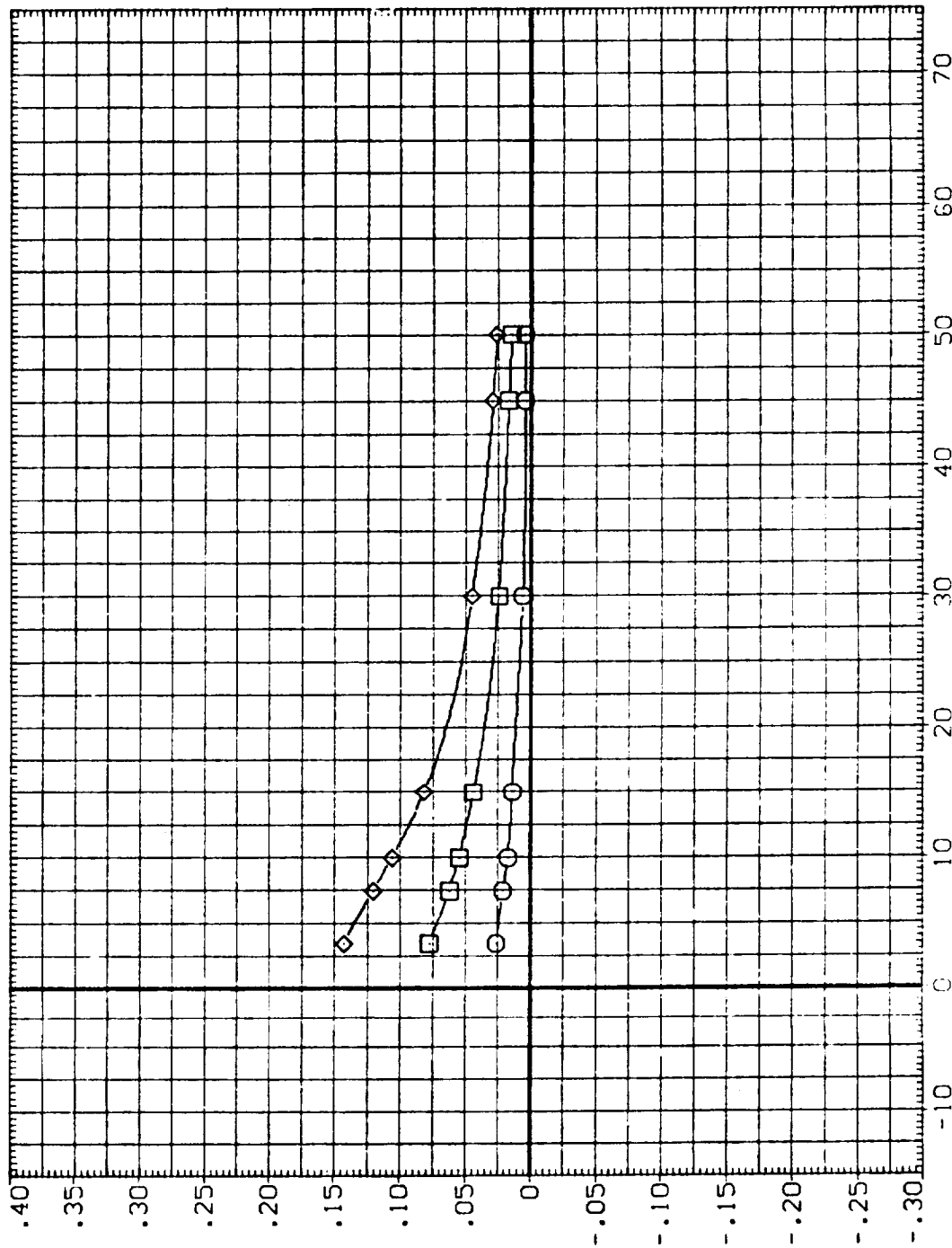


FIG. 32 EFFECT OF ORB INCIDENCE ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(B)ALPHAC= 2.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH035)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH027)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	8.000	.000	.600	5.000	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						SCALE 190.7500 IN ZC
						.0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 32 EFFECT OF ORB INCIDENCE ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH035)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 50. FT.
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH027)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	8.000	.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

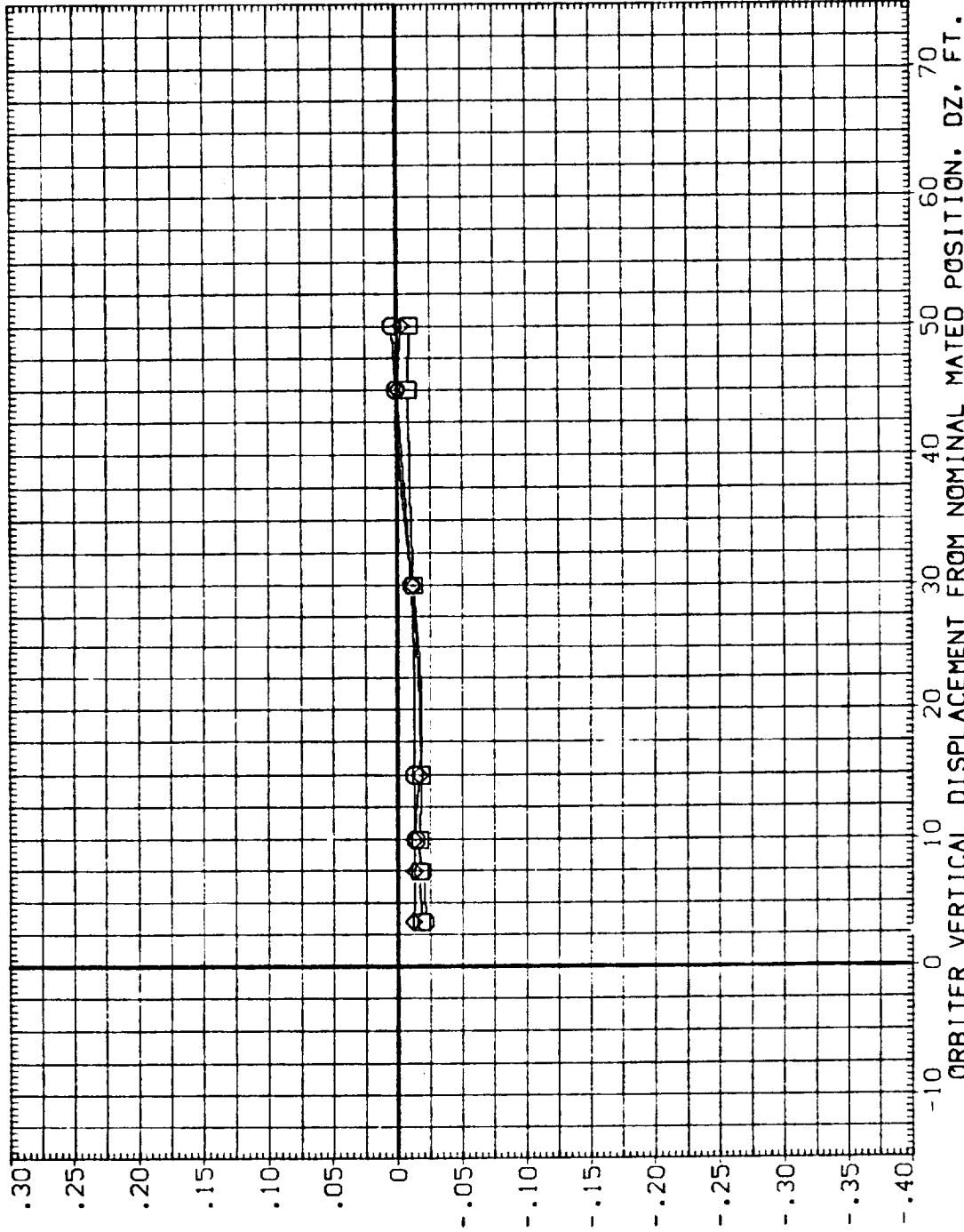


FIG. 33 EFFECT OF ORB INCIDENCE ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NHO35)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 SO.FT.
(4NHO34)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)	5.000	.000	.600	5.000	LREF 474.8100 IN.
(4NHO27)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)	8.000	.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

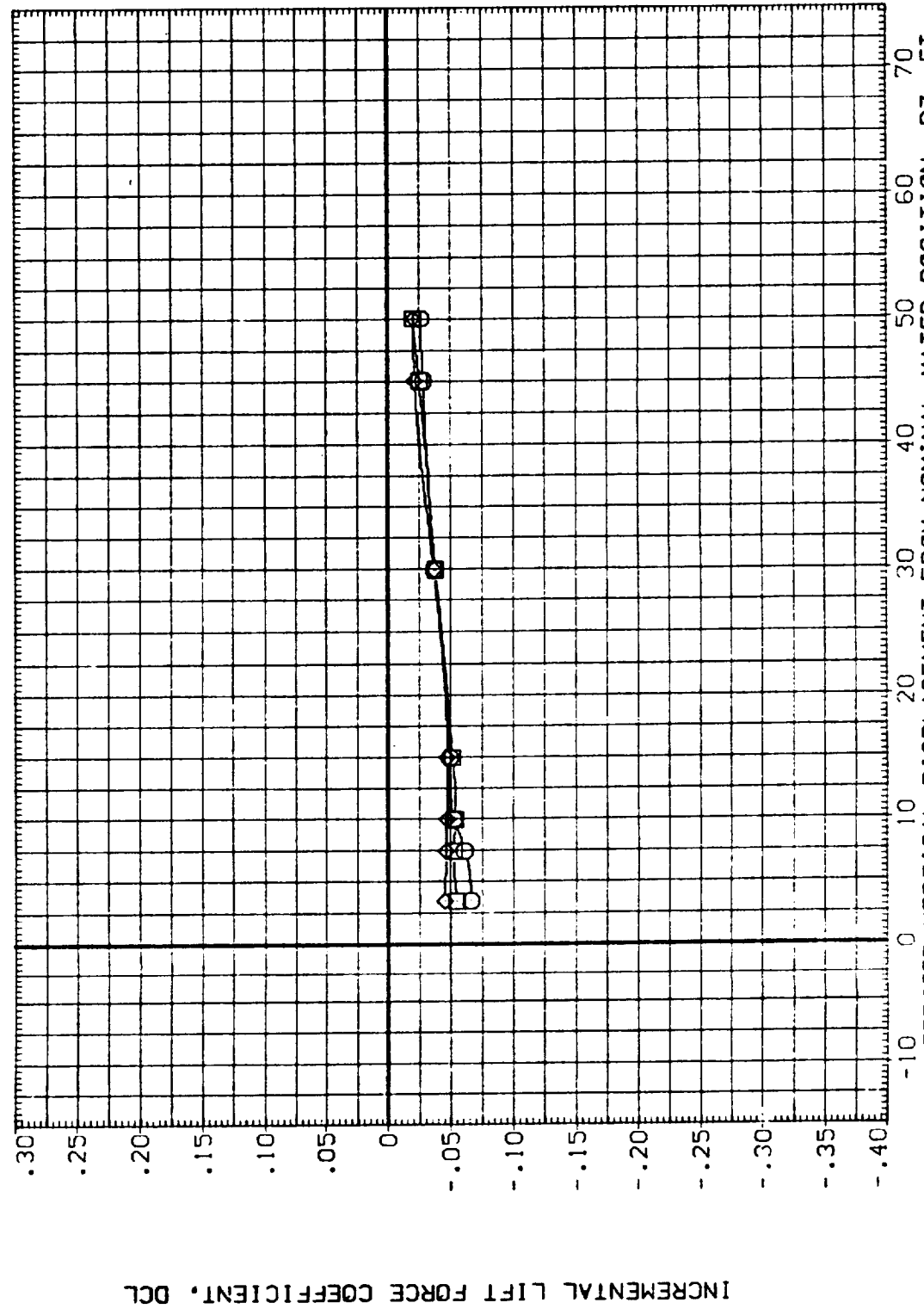


FIG. 33 EFFECT OF ORB INCIDENCE ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(B)ALPHAC= 2.00

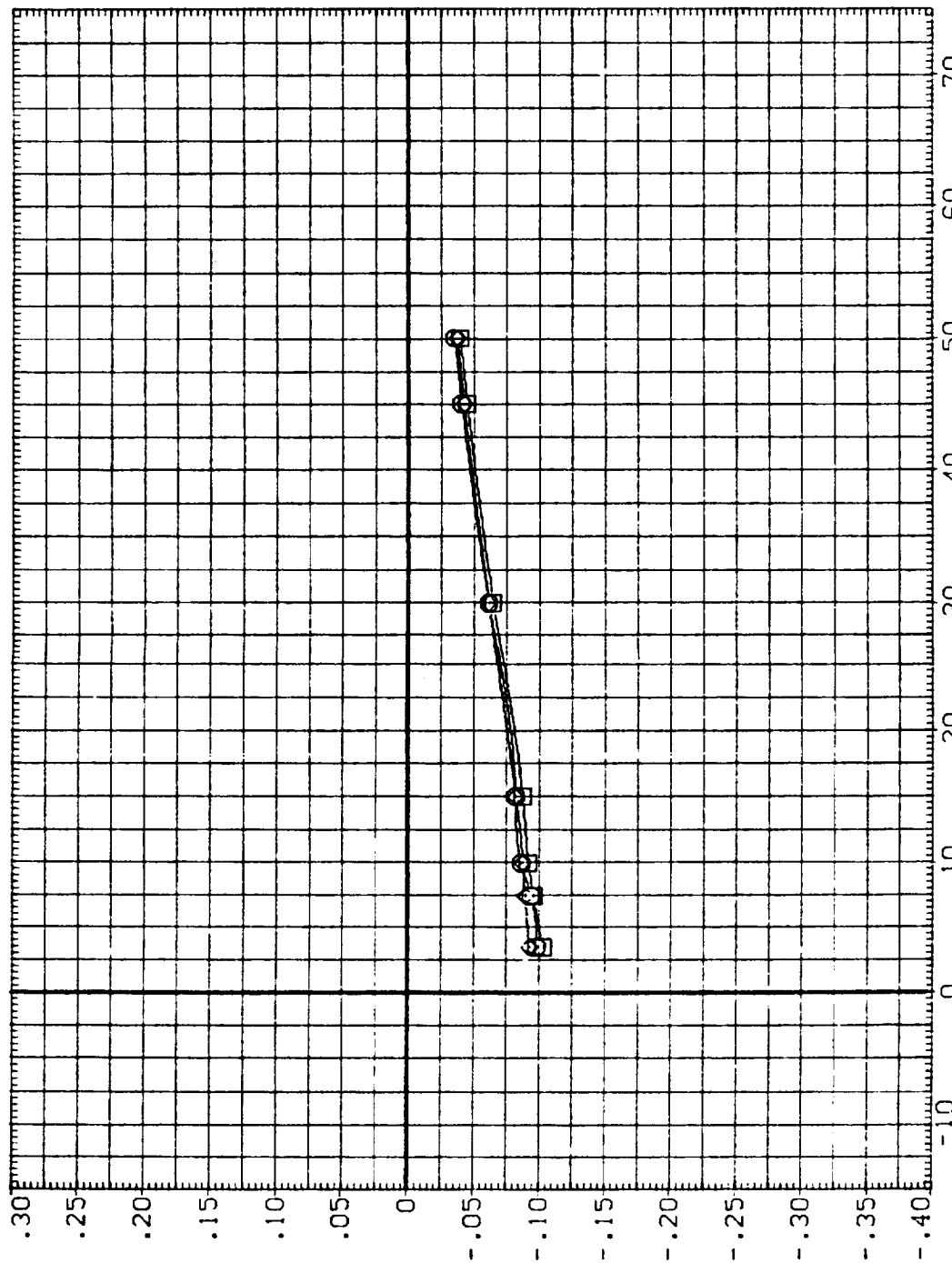
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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NH035)	ARC 14-120(CA23B)	747/1	ATI	035	(ORBITTER DATA)
(4NH034)	ARC 14-120(CA23B)	747/1	ATI	035	(ORBITTER DATA)
(4NH027)	ARC 14-120(CA23B)	747/1	ATI	035	(ORBITTER DATA)

REFERENCE INFORMATION

SREF	2690.0000	SO. FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0125	



ORBITTER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 33 EFFECT OF ORB INCIDENCE ON ORBITTER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH035)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 50. FT.
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH027)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)	8.000	.000	.600	5.000	BREF 936.6800 IN.
						YMRP 1109.0000 IN. X0
						ZMRP 375.0000 IN. Y0
						SCALE .0125

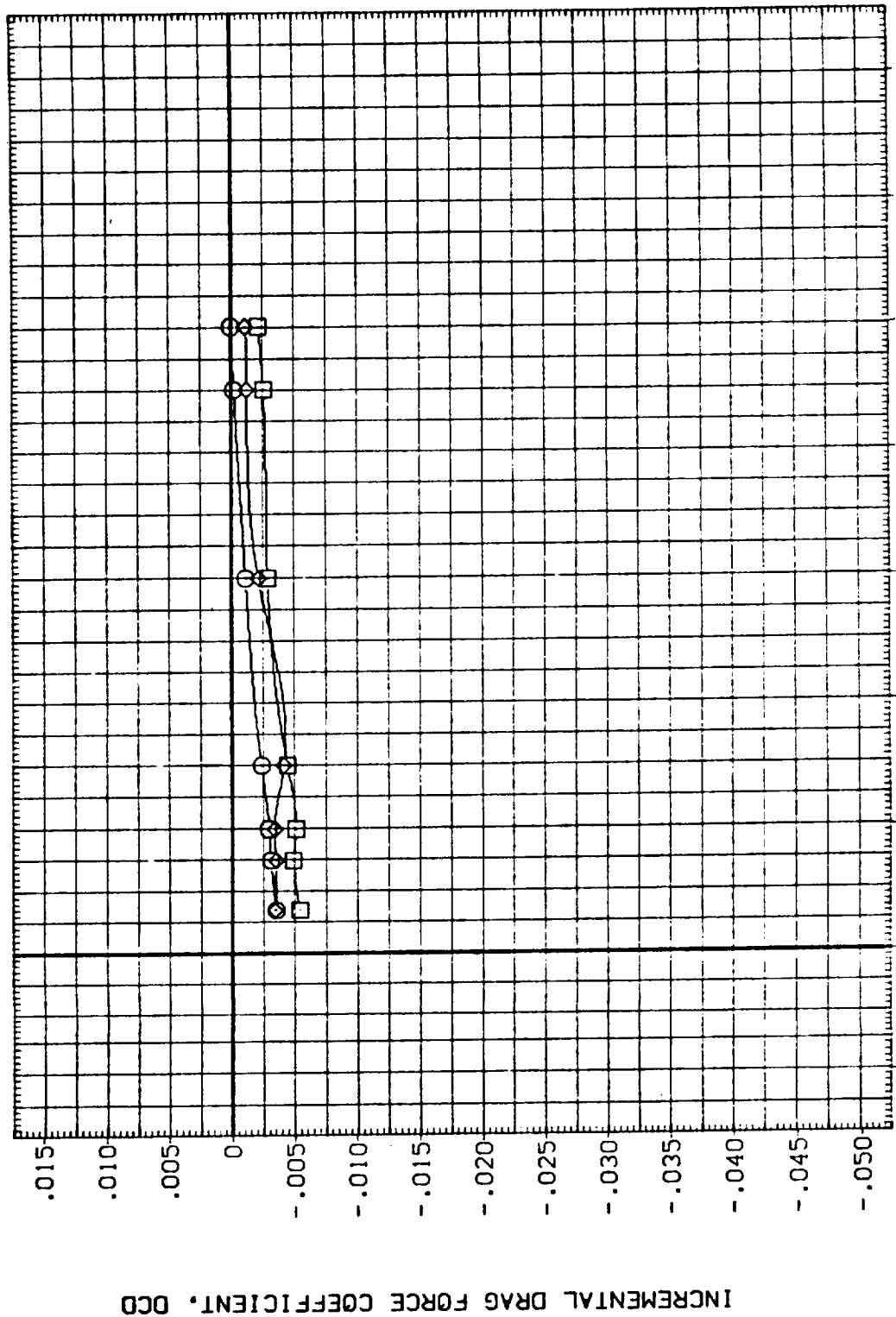


FIG. 33 EFFECT OF ORB INCIDENCE ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORB    ELEVON    MACH    STAB    REFERENCE INFORMATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH035)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORB1TER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 50. FT.
(4NH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORB1TER DATA)	5.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH027)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORB1TER DATA)	8.000	.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						ZMRP .0000 IN. Y0
						SCALE .0125

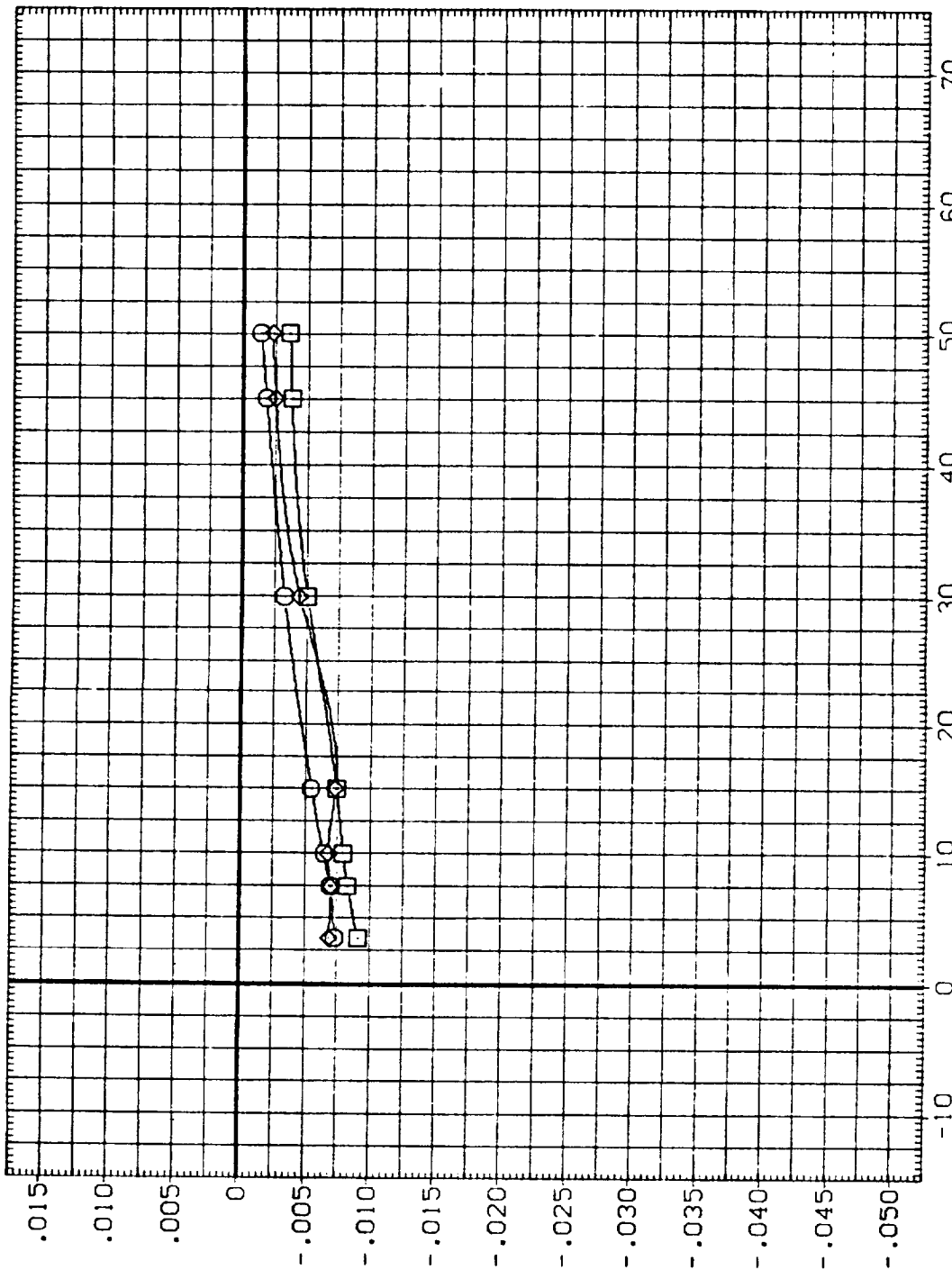


FIG. 33 EFFECT OF ORB INCIDENCE ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(B)ALPHAC= 2.00

DATA SET SYMBOL  
 (4NH035)  
 (4NH034)  
 (4NH027)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 747/1 AT1 Q3S1 (ORBITER DATA)  
 ARC 14-120(CA238) 747/1 AT1 Q3S1 (ORBITER DATA)  
 ARC 14-120(CA238) 747/1 AT1 Q3S1 (ORBITER DATA)

IO RB  
 4.000  
 6.000  
 8.000

ELEVON  
 .000  
 .000  
 .000

MACH  
 .600  
 .600  
 .600

STAB  
 5.000  
 5.000  
 5.000

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

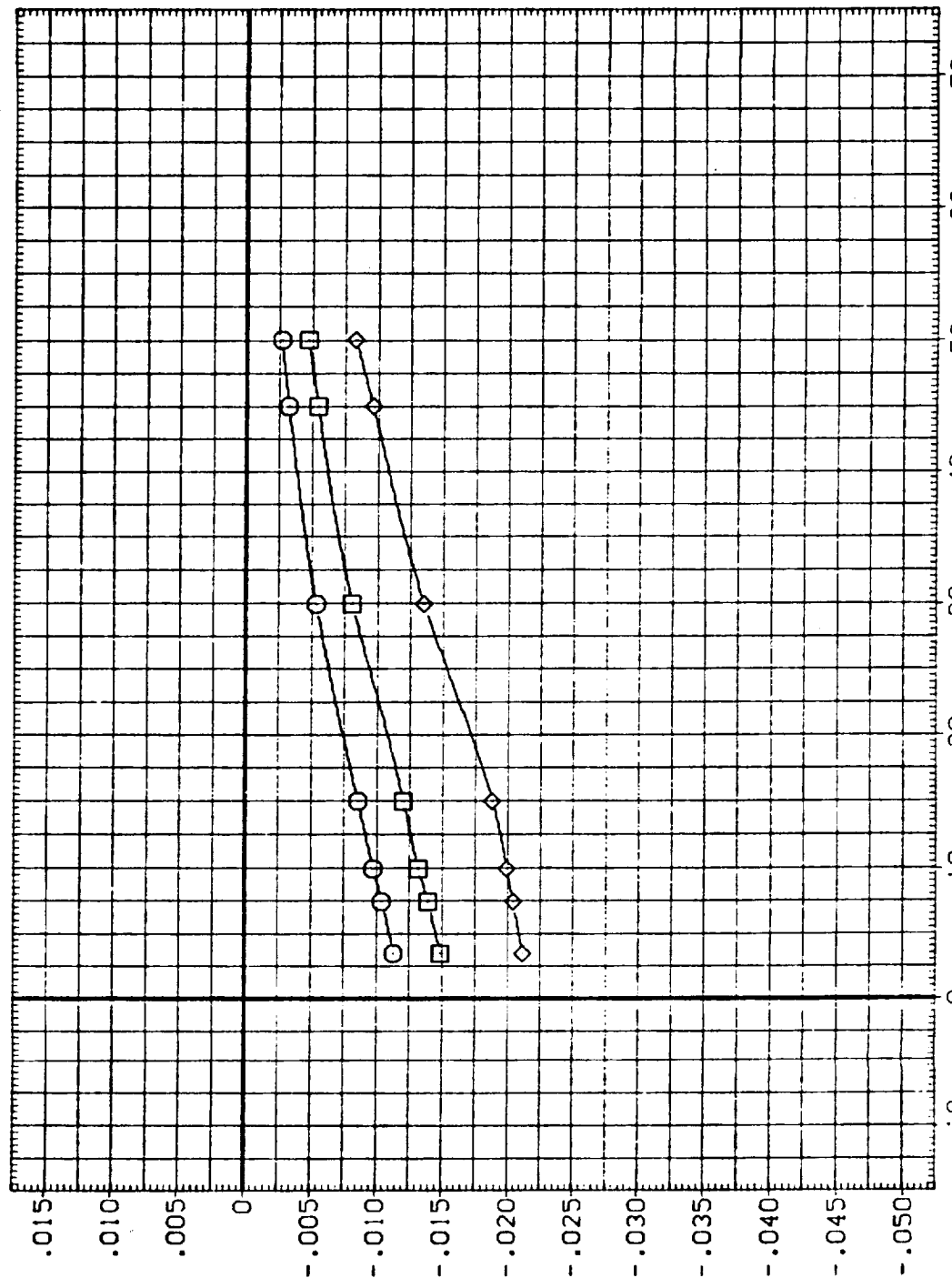


FIG. 33 EFFECT OF ORB INCIDENCE ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH035)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 SO.FT.
(4NH034)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH027)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	8.000	.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

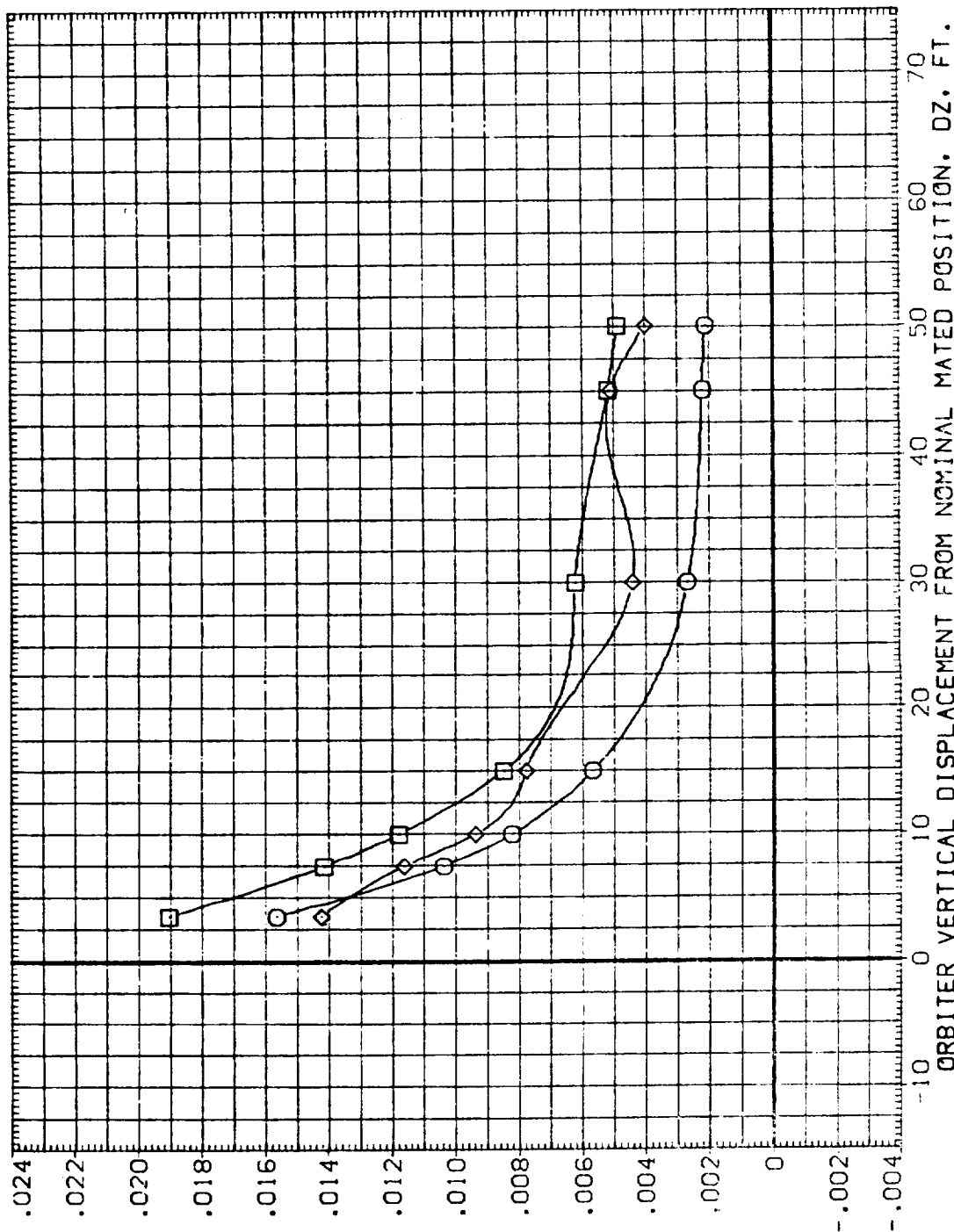


FIG. 33 EFFECT OF ORB INCIDENCE ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(A)ALPHAC= .00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOBS	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH035)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0300 SQ.FT.
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH027)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	8.000	.000	.600	5.000	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

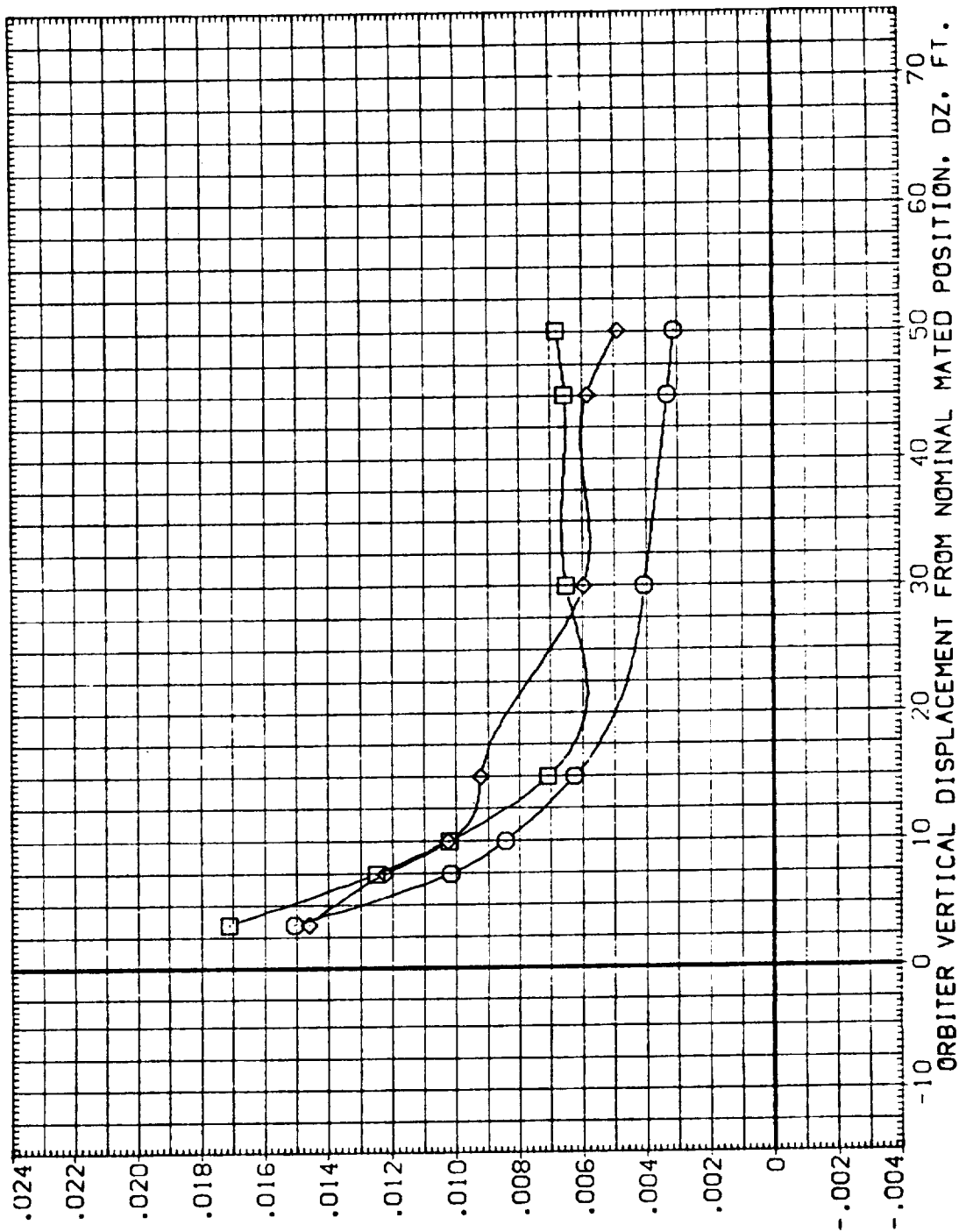


FIG. 33 EFFECT OF ORB INCIDENCE ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(B)ALPHAC= 2.00

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL

CONFIGURATION DESCRIPTION

IORB

ELEVON

MACH

STAB

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

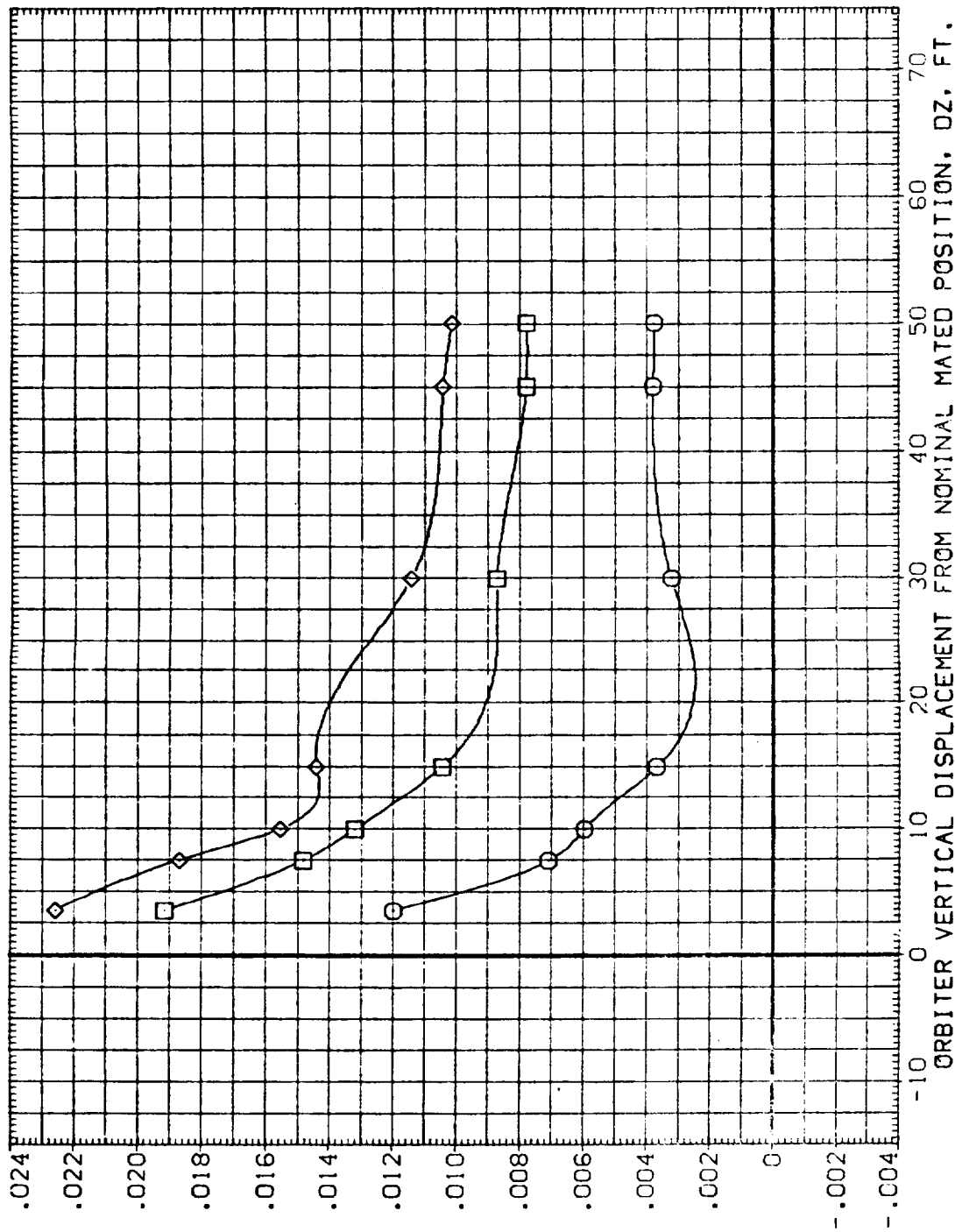


FIG. 33 EFFECT OF ORB INCIDENCE ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(C)ALPHAC= 4.00

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	238.0400 IN.
XWRP	1339.5000 IN. XC
YWRP	190.7500 IN. YC
ZWRP	190.7500 IN. ZC
SCALE	.0125

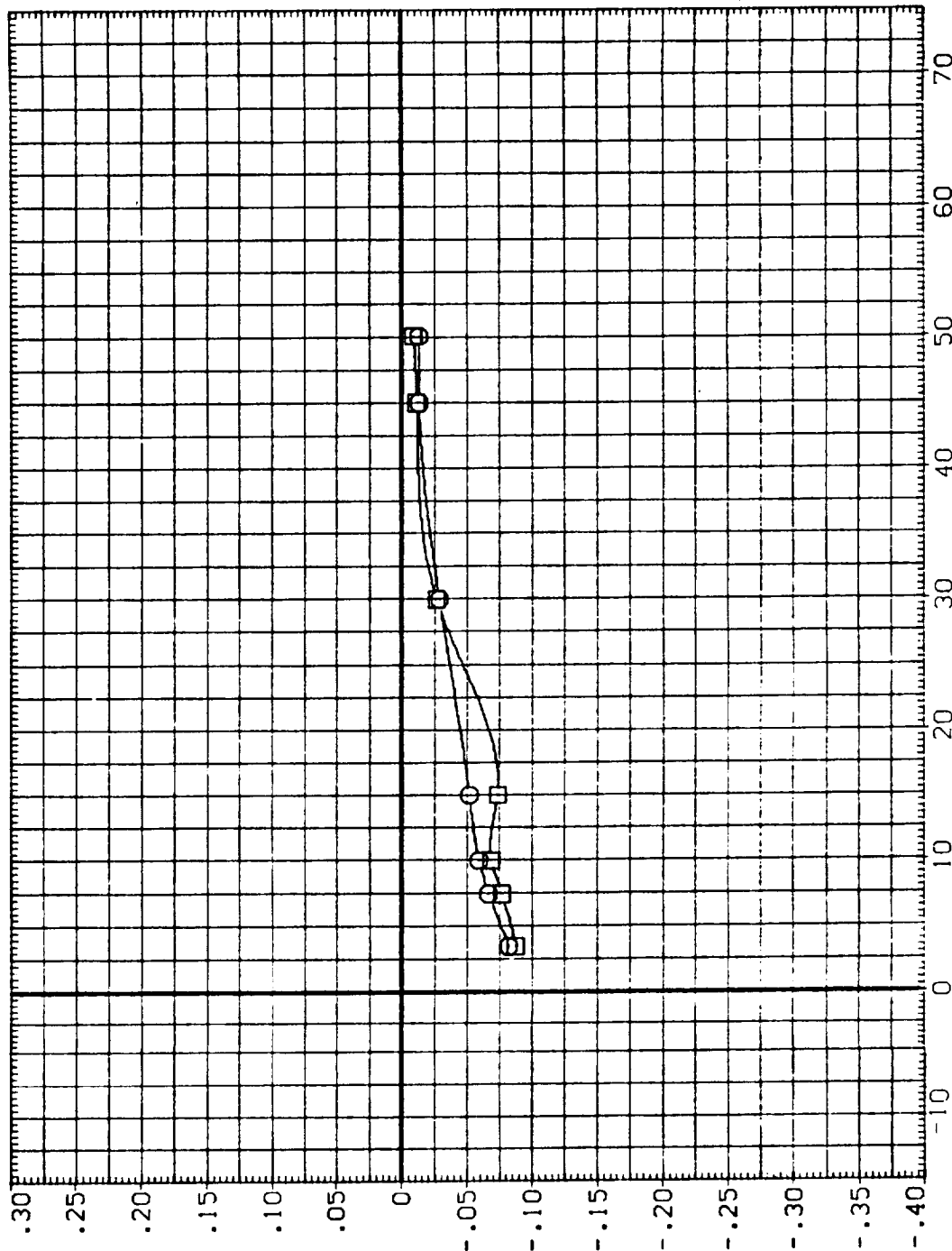


FIG. 34 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL (PNH034) (PNH038) CONFIGURATION DESCRIPTION ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA) 747/1 AT1 0351 (CARRIER DATA) ORB 6.000 6.000 ELEVON 5.000 5.000 MACH .600 .600 STAB 5.000 5.000 REFERENCE INFORMATION SREF 5500.0000 SQ.FT. LREF 327.7800 IN. BREF 2348.0400 IN. XMRP 1339.9000 IN. XC YMRP .0000 IN. YC ZMRP 190.7500 IN. ZC SCALE .0125

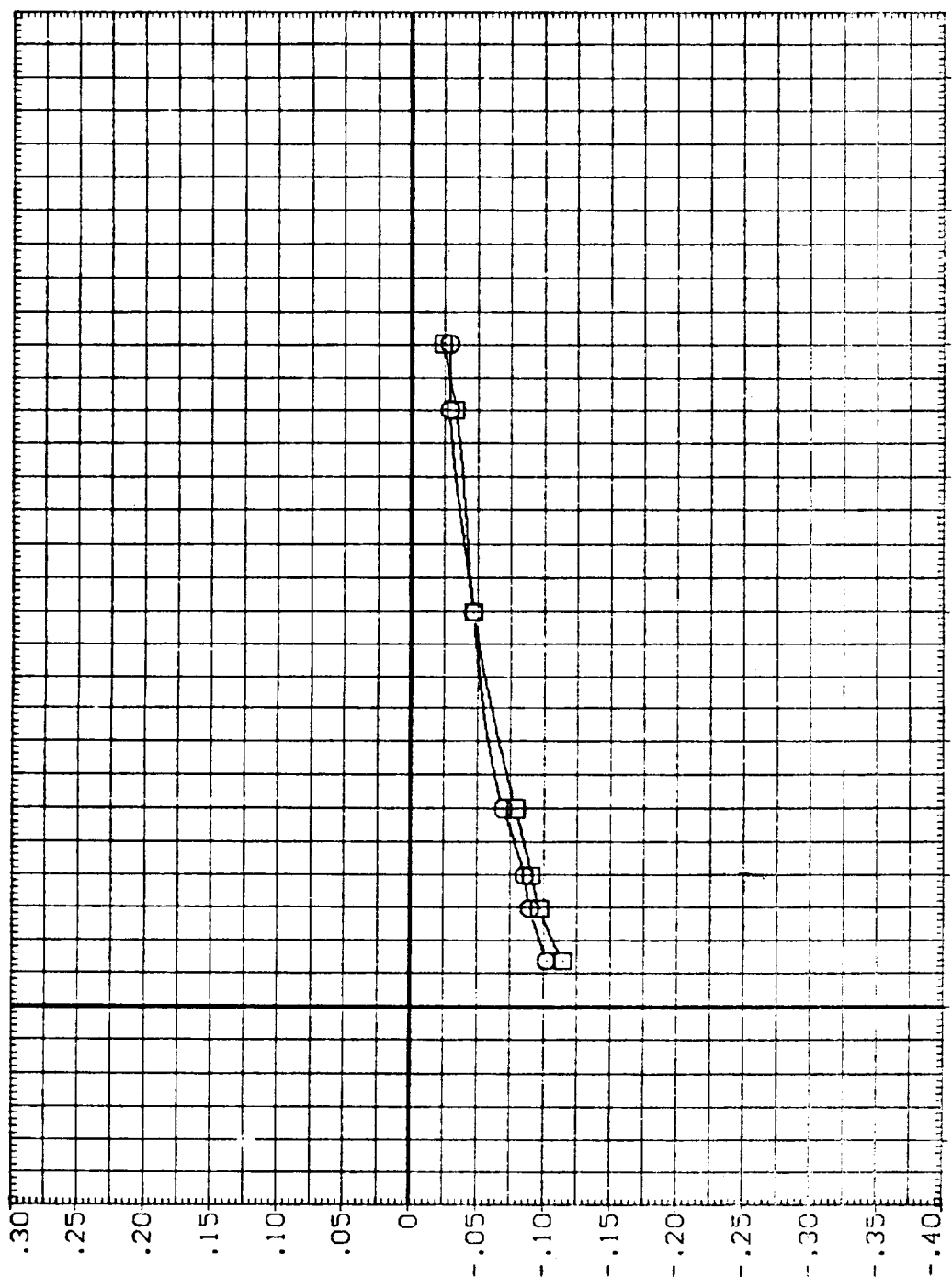


FIG. 34 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(B)ALPHAC= 2.00  
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REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN. XC
XMRP	1339.9000 IN. YC
YMRP	.0000 IN. ZC
ZMRP	190.7500
SCALE	.0125

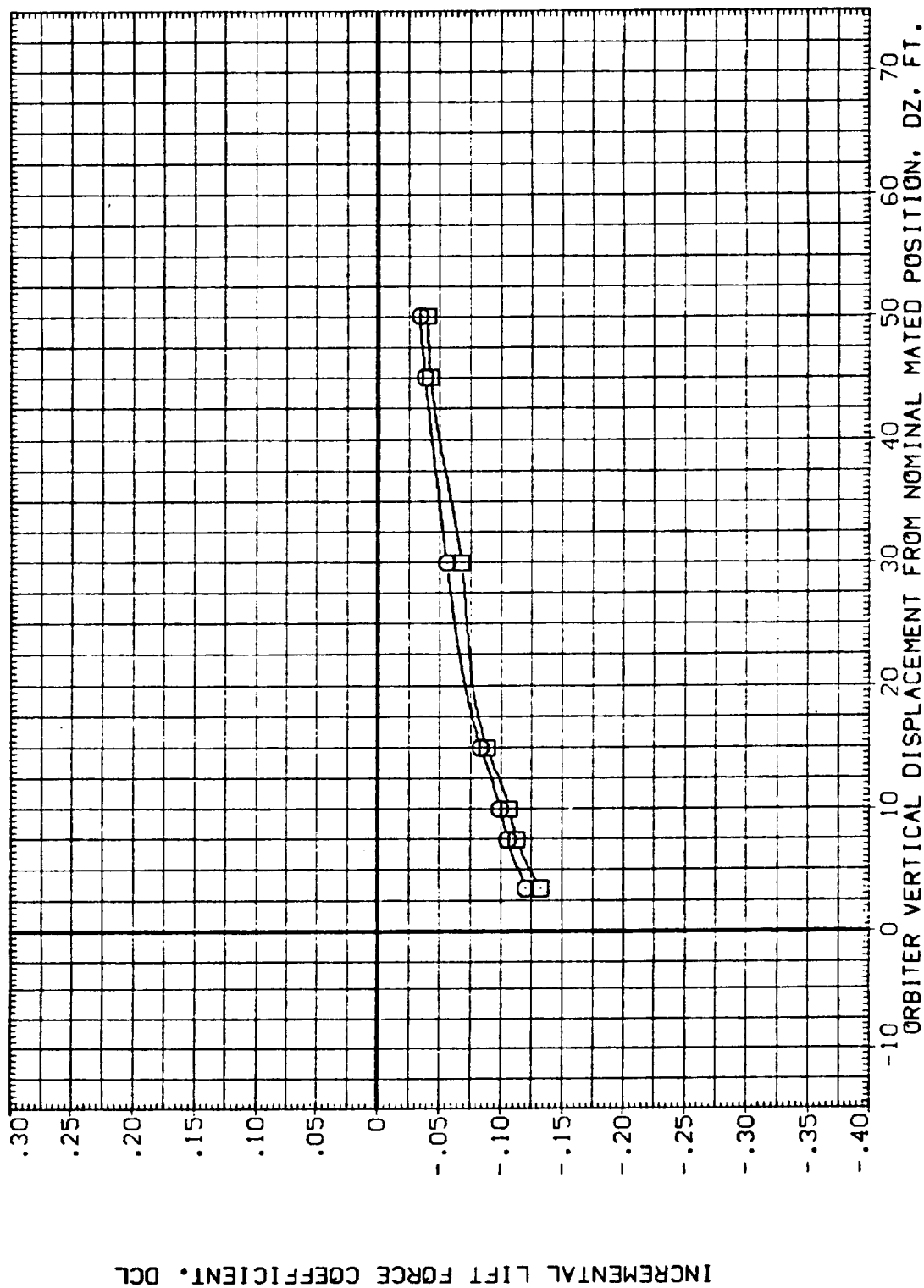


FIG. 34 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(C)ALPHAC= 4.00

DATA SET SYMBOL (PNH034) (PNH038)

CONFIGURATION DESCRIPTION ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA) 747/1 AT1 03S1 (CARRIER DATA)

10RB 6.000 6.000  
ELEVON .000 5.000  
MACH .600 .600  
STAB 5.000 5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

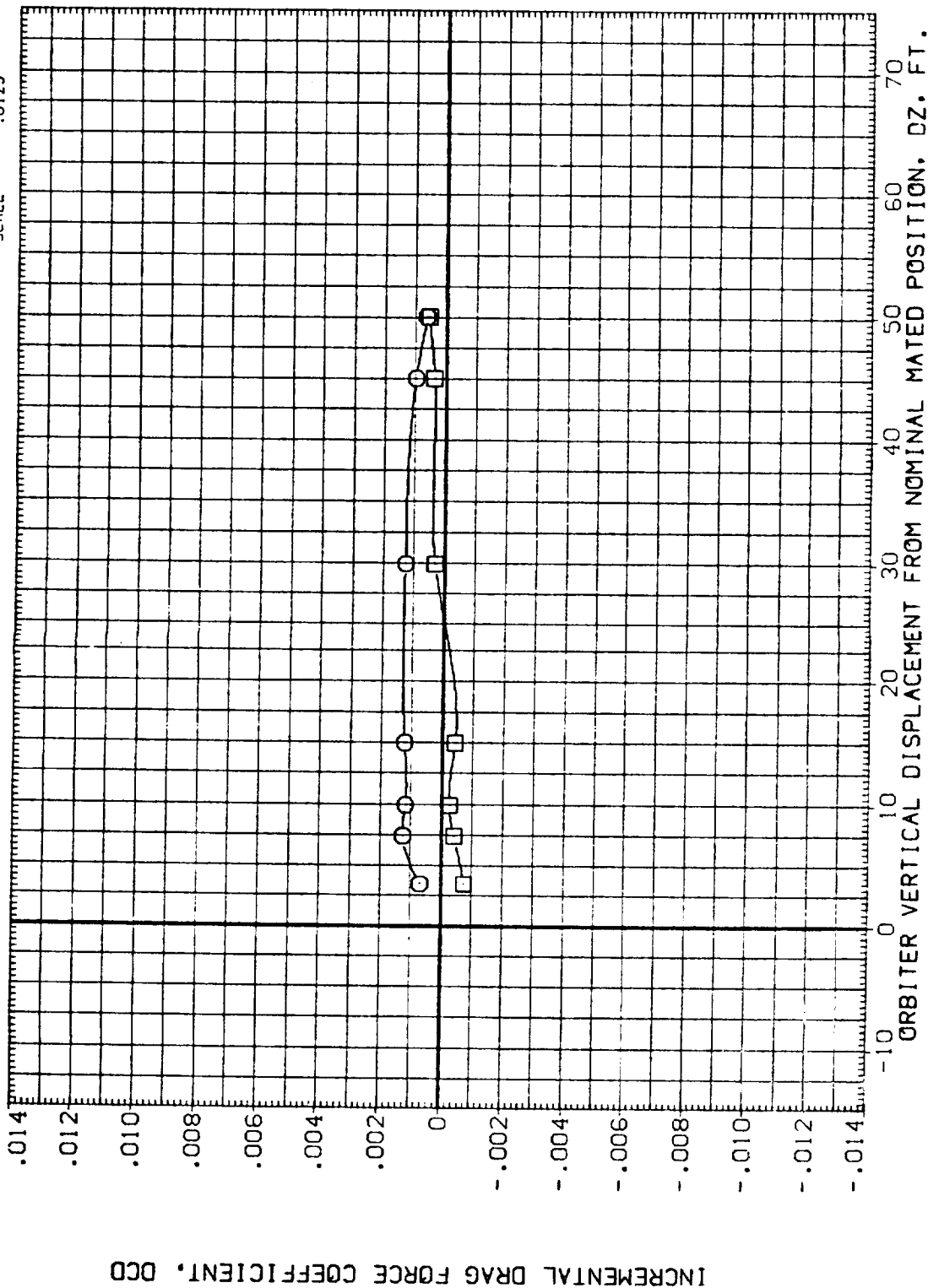


FIG. 34 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH038)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.3000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

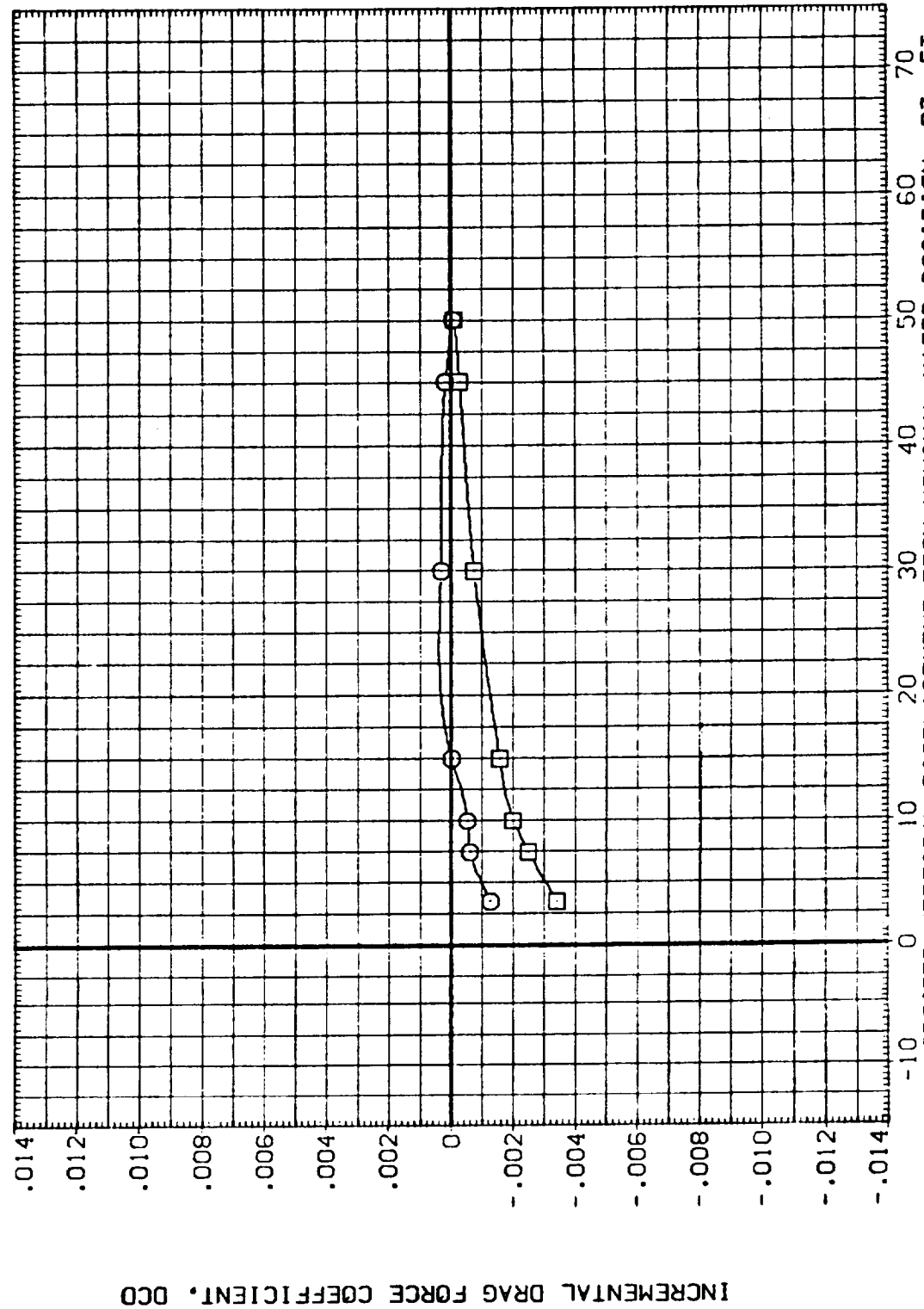



FIG. 34 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
 (B)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(PNH034)  (PNH038)

ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)

ICRB 6.000 6.000

ELEVON MACH STAB  
.000 .600 5.000  
5.000 .600 5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

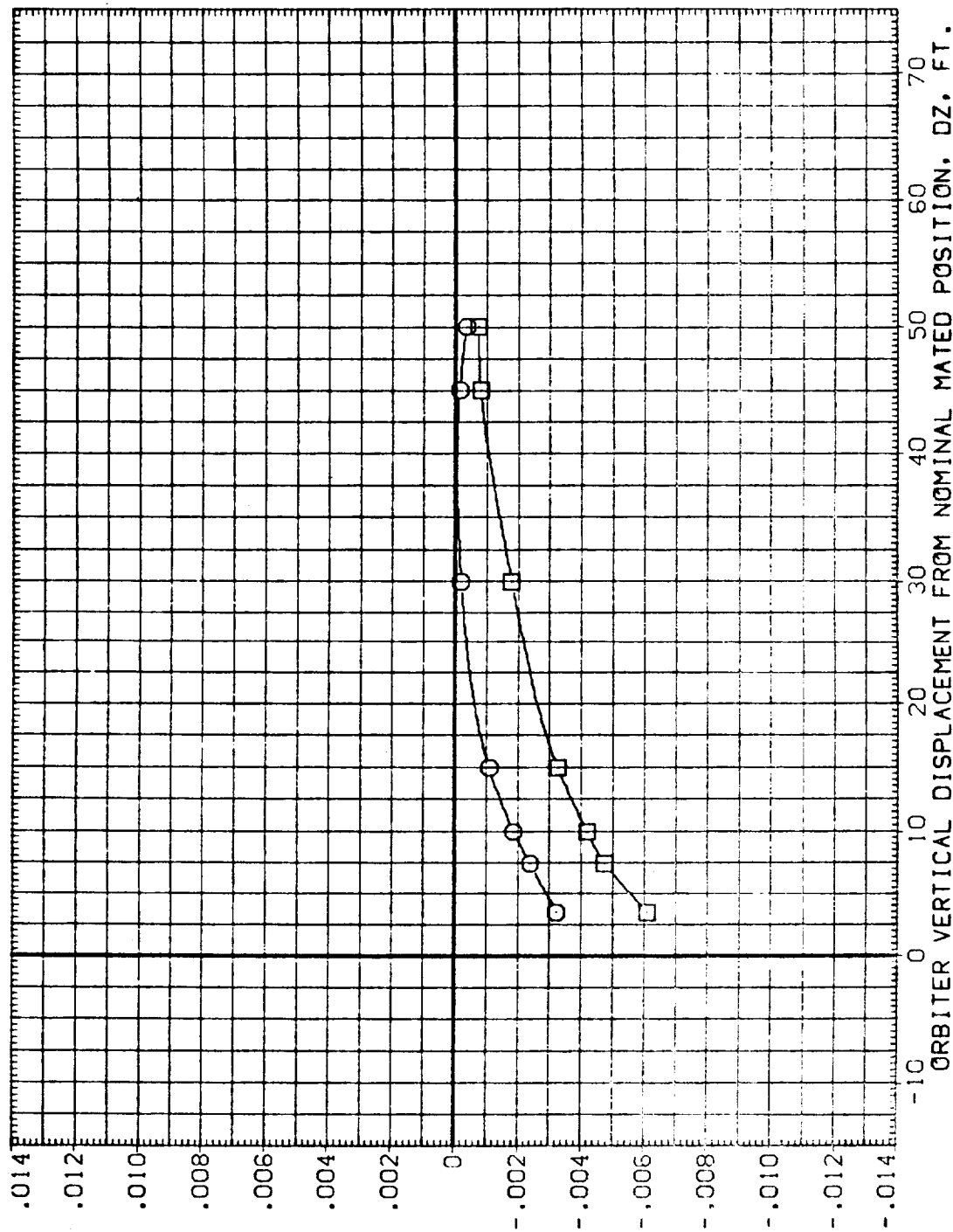


FIG. 34 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(C)ALPHAC= 4.00 PAGE 270

INCREMENTAL DRAG FORCE COEFFICIENT, DCD



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNH034) ☐ ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
 (PNH038) ☐ ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 IORB 6.000 6.000 SREF 5500.0000 SQ.FT.  
 ELEVON .000 .000 LREF 327.7800 IN.  
 MACH .600 .600 BREF 2348.0400 IN.  
 STAB 5.000 5.000 XMRP 1339.9000 IN. XC  
 SCALE .0125 YMRP .0000 IN. YC  
 ZMRP 190.2500 IN. ZC

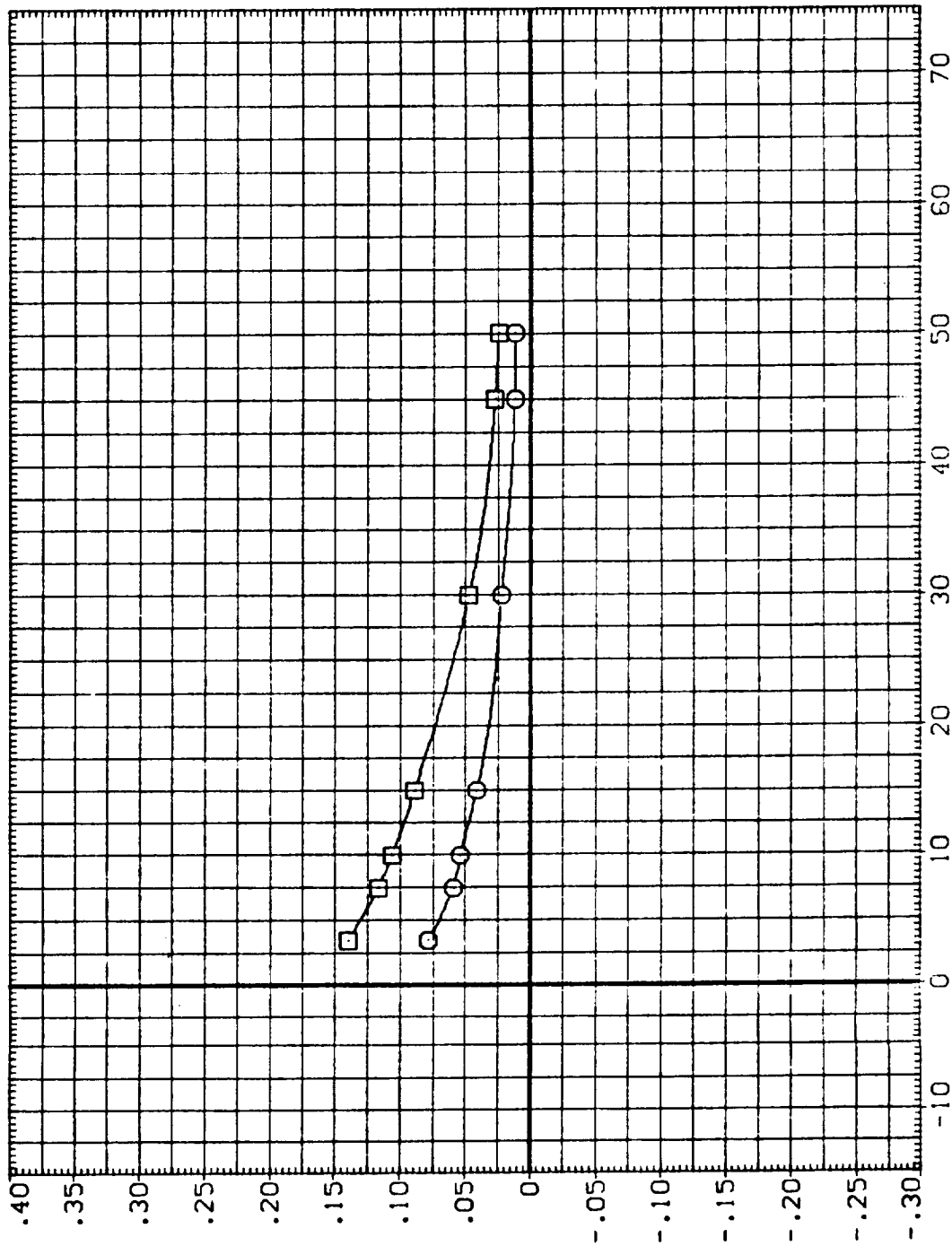


FIG. 34 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
 (A)ALPHAC= .00 PAGE 271

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 50. FT.
(PNH038)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						YMRP 1339.9000 IN.
						ZMRP .0000 IN.
						SCALE 190.7500 IN.
						SCALE .0125

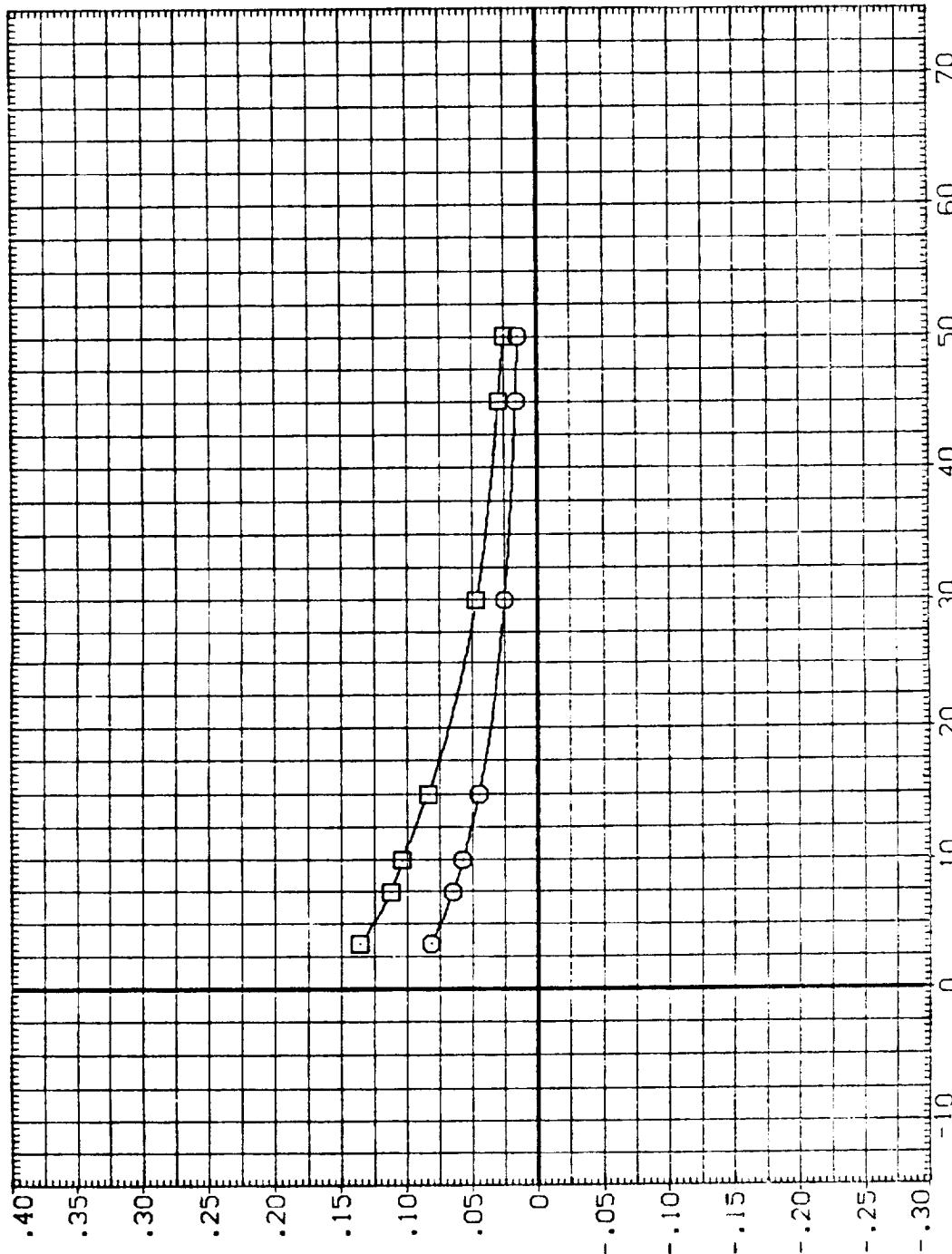
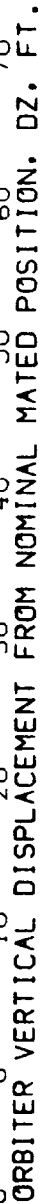


FIG. 34 EFFECT OF ORBITER ELEVONS ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(B)ALPHAC= 2.00

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM



(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH038)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

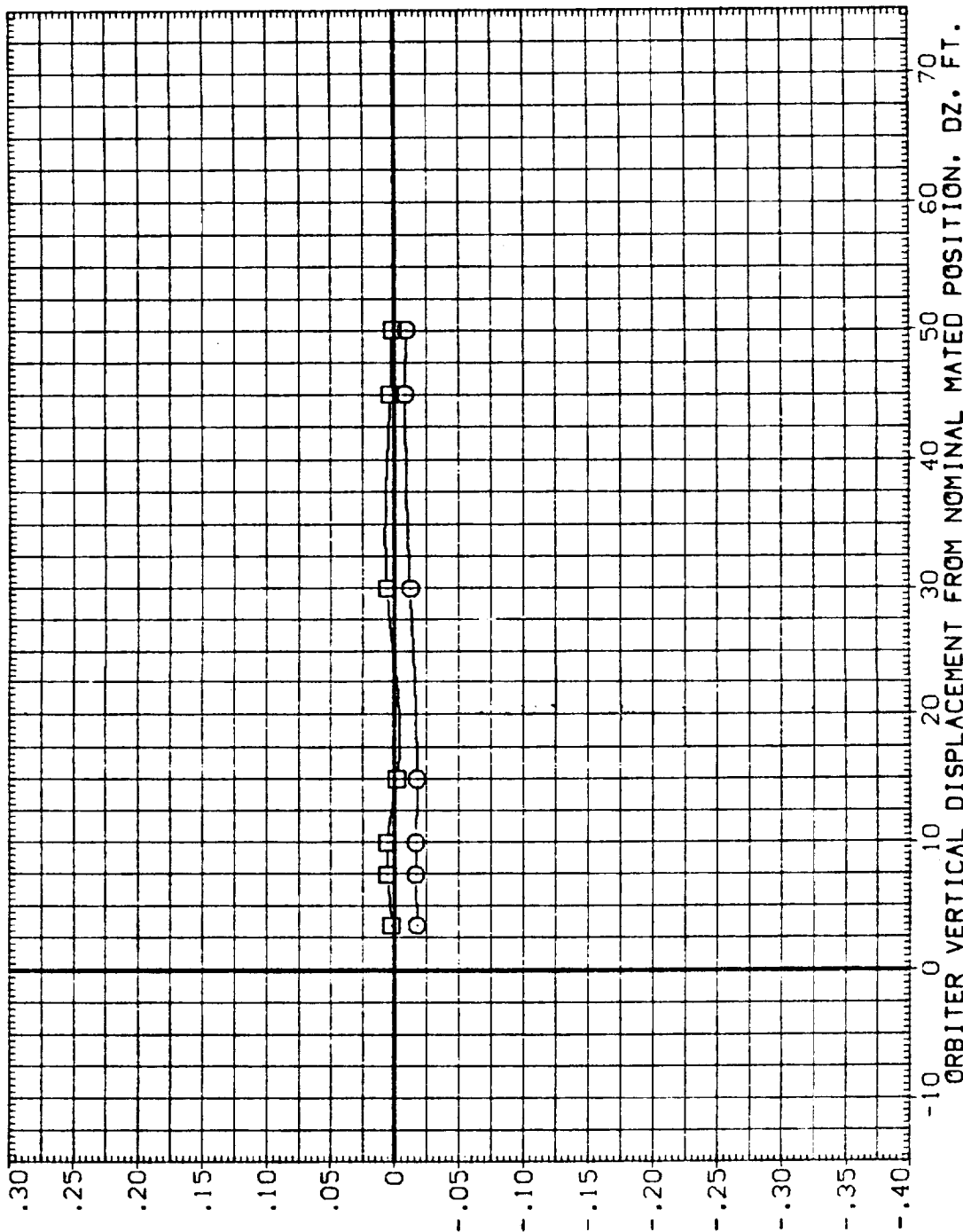


FIG. 35 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA23B)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH038)	ARC 14-120(CA23B)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

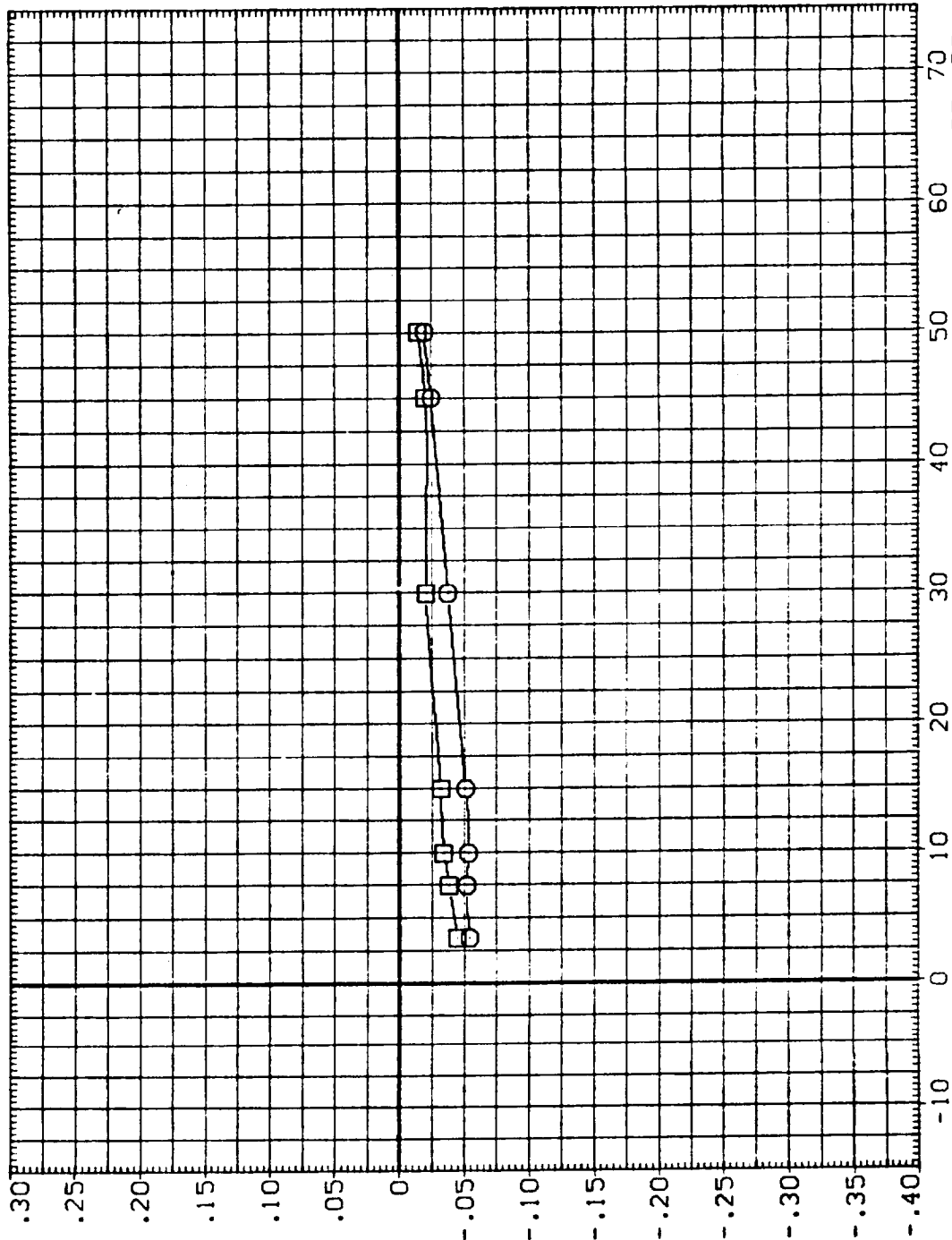


FIG. 35 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 53. FT.
(4NH038)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 14. IN.
						BREF 936.6800 14. IN.
						YMRP 1109.0000 14. IN.
						ZMRP 375.0000 14. IN.
						SCALE .0125

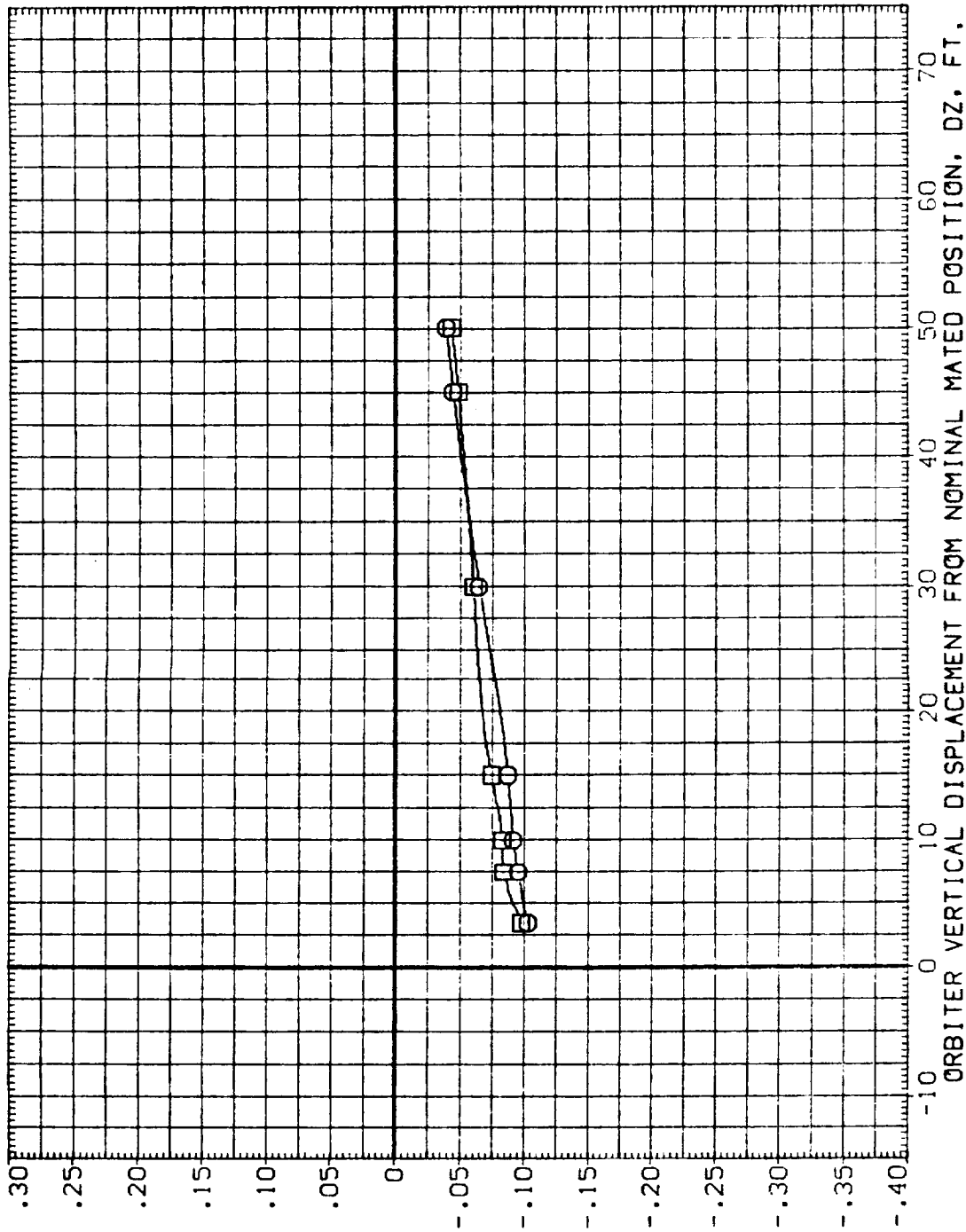


FIG. 35 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NHQ34)	ARC 14-120(CA23B) 747/1 AT1 C3S1 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SO.FT.
(4NHQ38)	ARC 14-120(CA23B) 747/1 AT1 C3S1 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XHRP 1109.0000 IN. X0
						YHRP .0000 IN. Y0
						ZHRP 375.0000 IN. Z0
						SCALE .0125

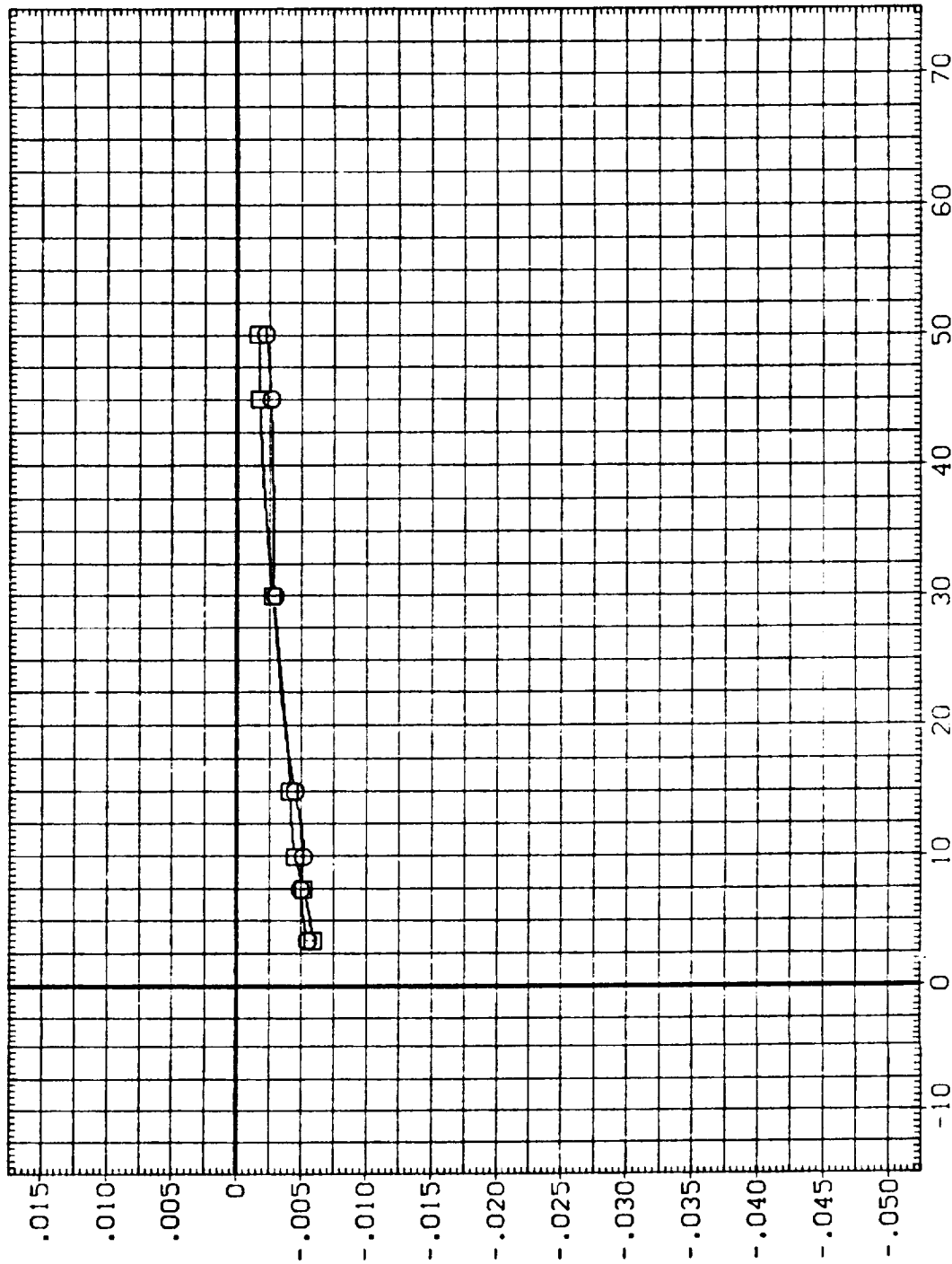


FIG. 35 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(A)ALPHAC= .00

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DATA SET SYMBOL (4NH034) (4NH038) CONFIGURATION DESCRIPTION ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA) 747/1 AT1 03S1 (ORBITER DATA) ORB 6.000 6.000 STAB 5.000 5.000 ELEVON .000 .000 MACH .600 .600 REFERENCE INFORMATION SREF 2690.0000 50. FT. LREF 474.8100 IN. BREF 936.6800 IN. X0 1109.0000 IN. Y0 375.0000 IN. Z0 375.0000 IN. SCALE .0125

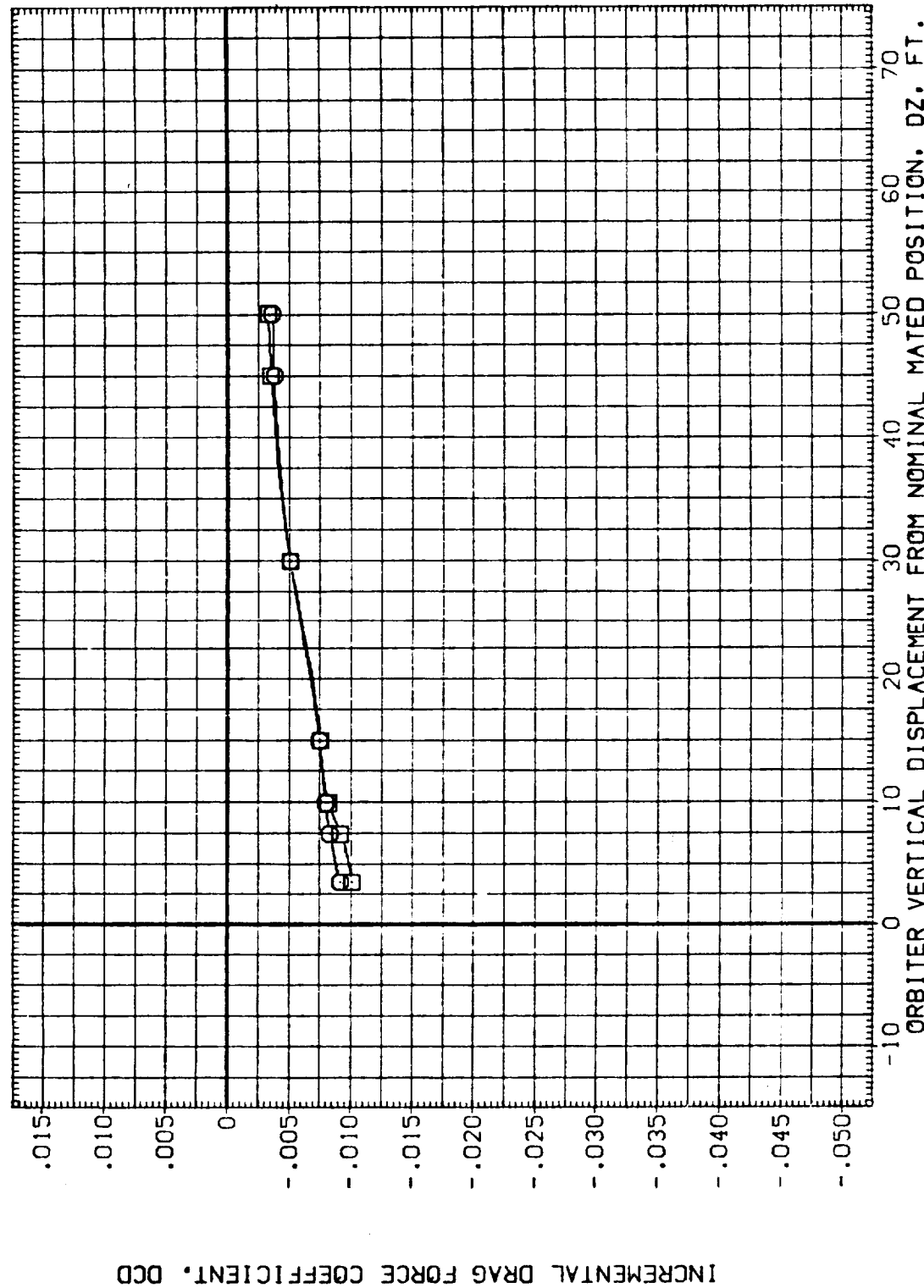


FIG. 35 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON) (B)ALPHAC= 2.00 PAGE 278



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NHQ34)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NHQ38)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

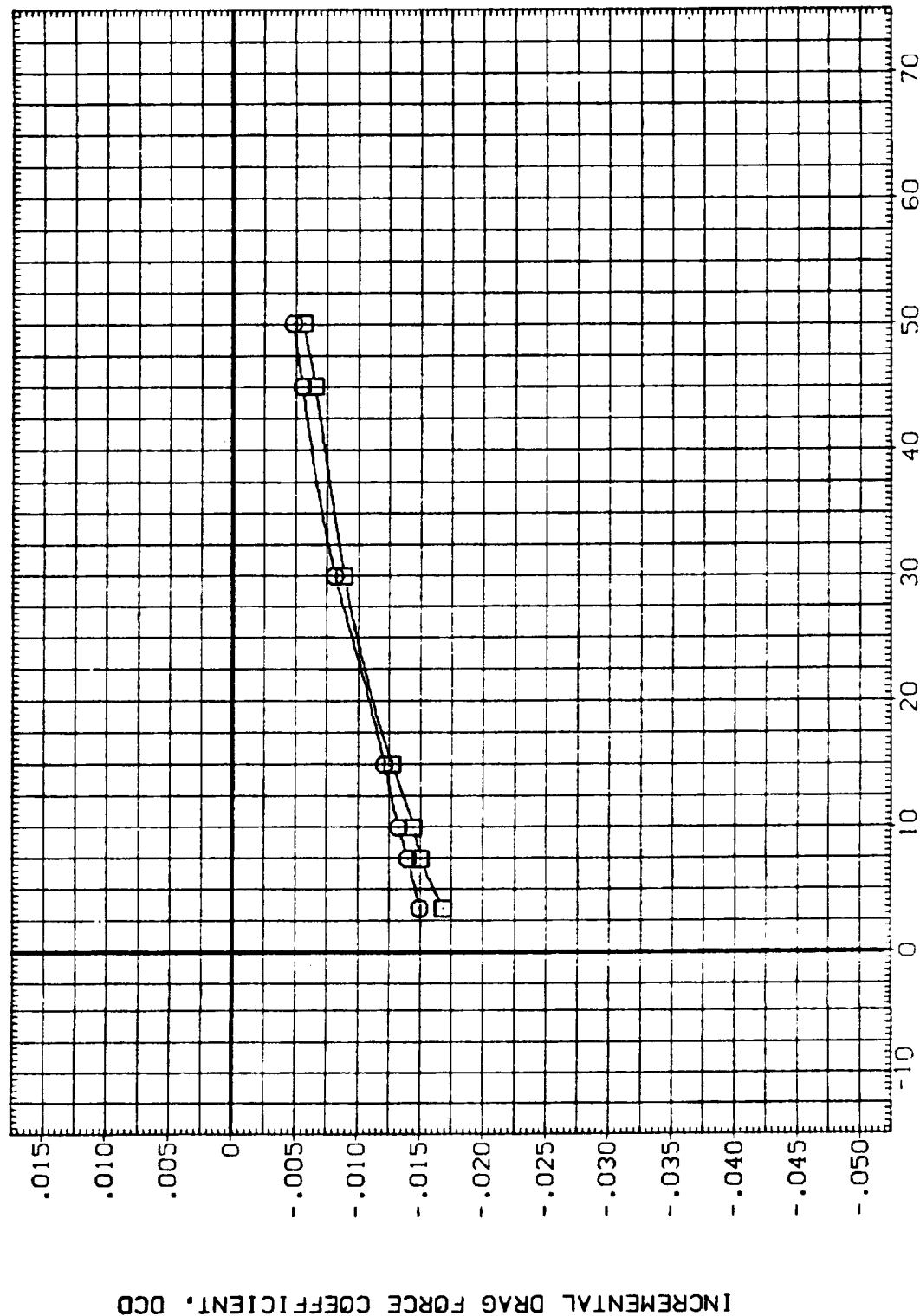


FIG. 35 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL (4NH034) (4NH038) CONFIGURATION DESCRIPTION ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA) 747/1 AT1 0351 (ORBITER DATA) 10RB 6.000 6.000 STAB 5.000 5.000 MACH .600 .600 ELEVON .000 5.000 REFERENCE INFORMATION SREF 2690.0000 50.FT. LREF 474.8100 IN. BREF 936.6800 IN. XMRP 1109.0000 IN. YMRP .0000 IN. ZMRP 375.0000 IN. ZD SCALE .0125

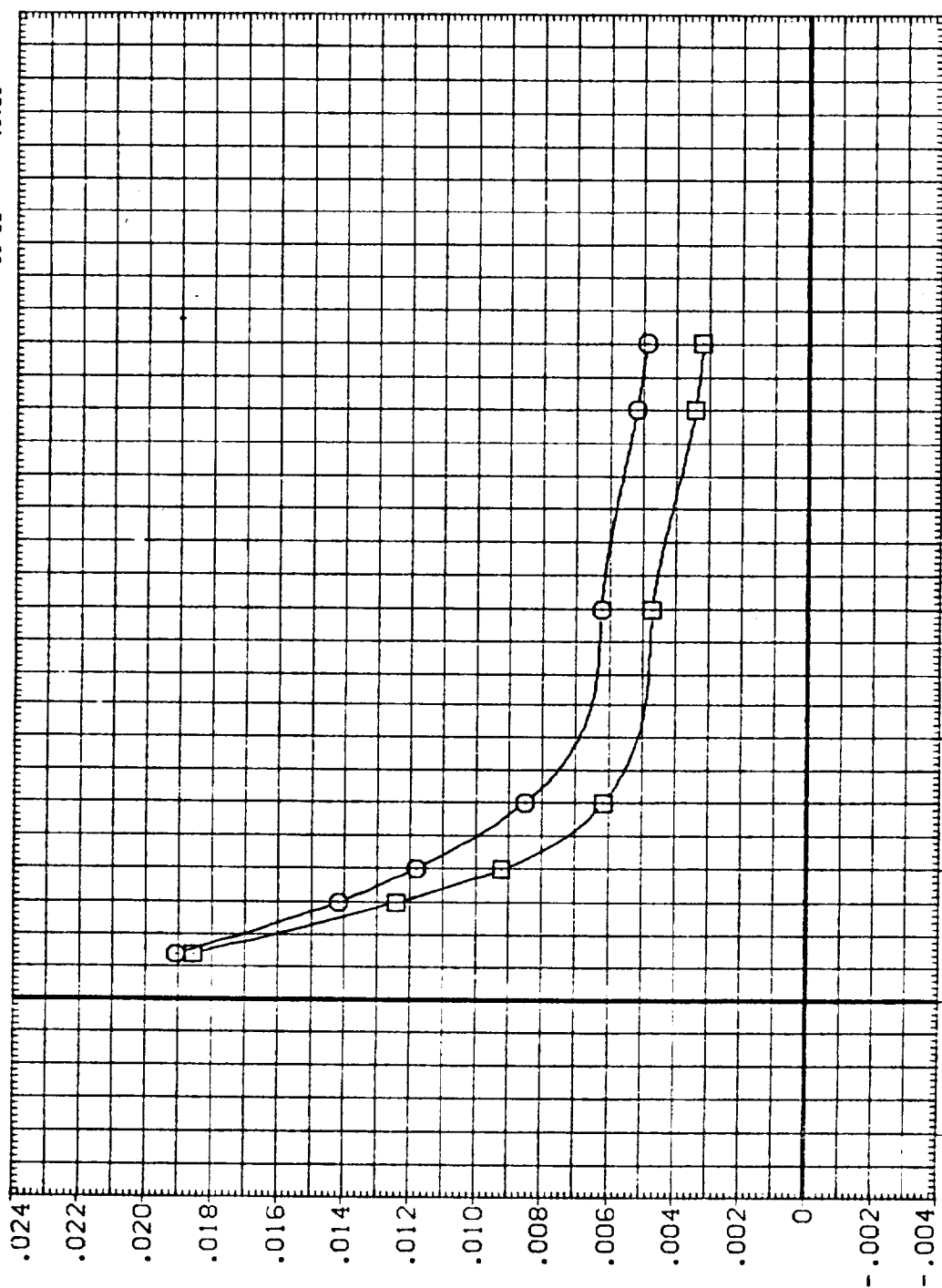


FIG. 35 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(A)ALPHAC= .00

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN. X0
YMRP	.0000 IN. Y0
ZMRP	375.0000 IN. Z0
SCALE	.0125

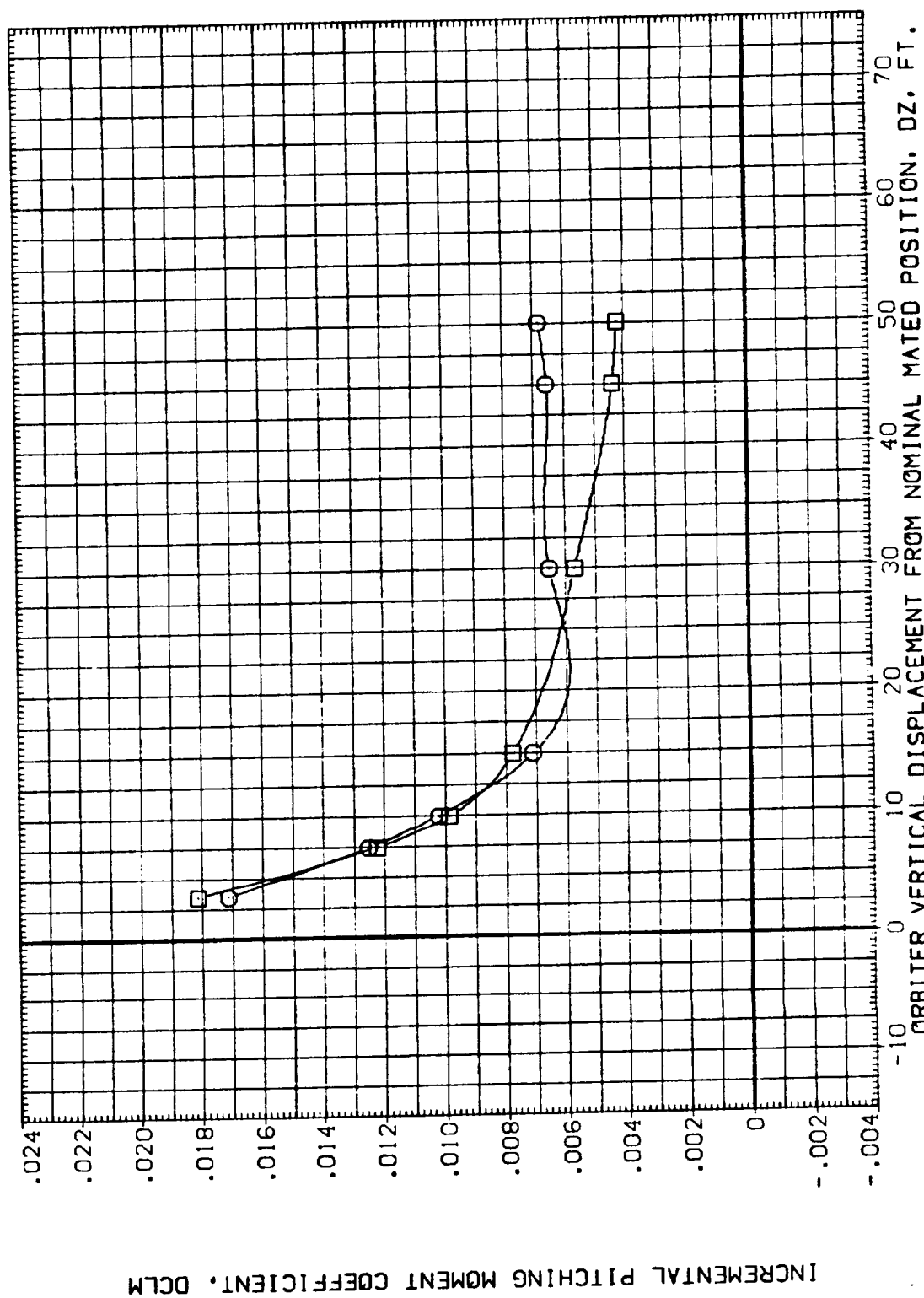


FIG. 35 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH034) [ ] ARC 14-120(CA238) 747/1 AT1 Q351 (ORBITER DATA)  
 (4NH038) [ ] ARC 14-120(CA238) 747/1 AT1 Q351 (ORBITER DATA)

10RB 6.000 6.000  
 ELEVON .000 3.000  
 MACH .600 .600  
 STAB 5.000 5.000  
 REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

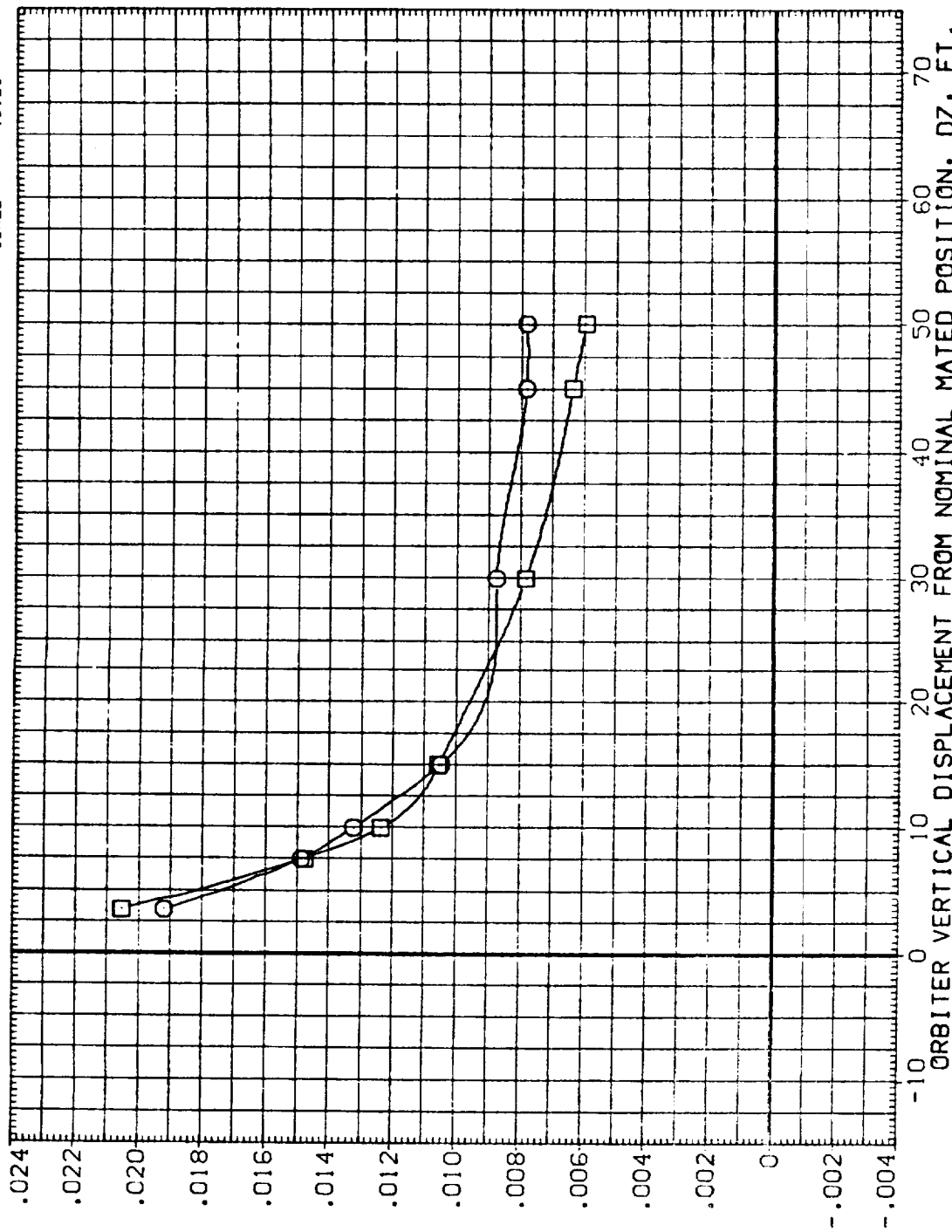
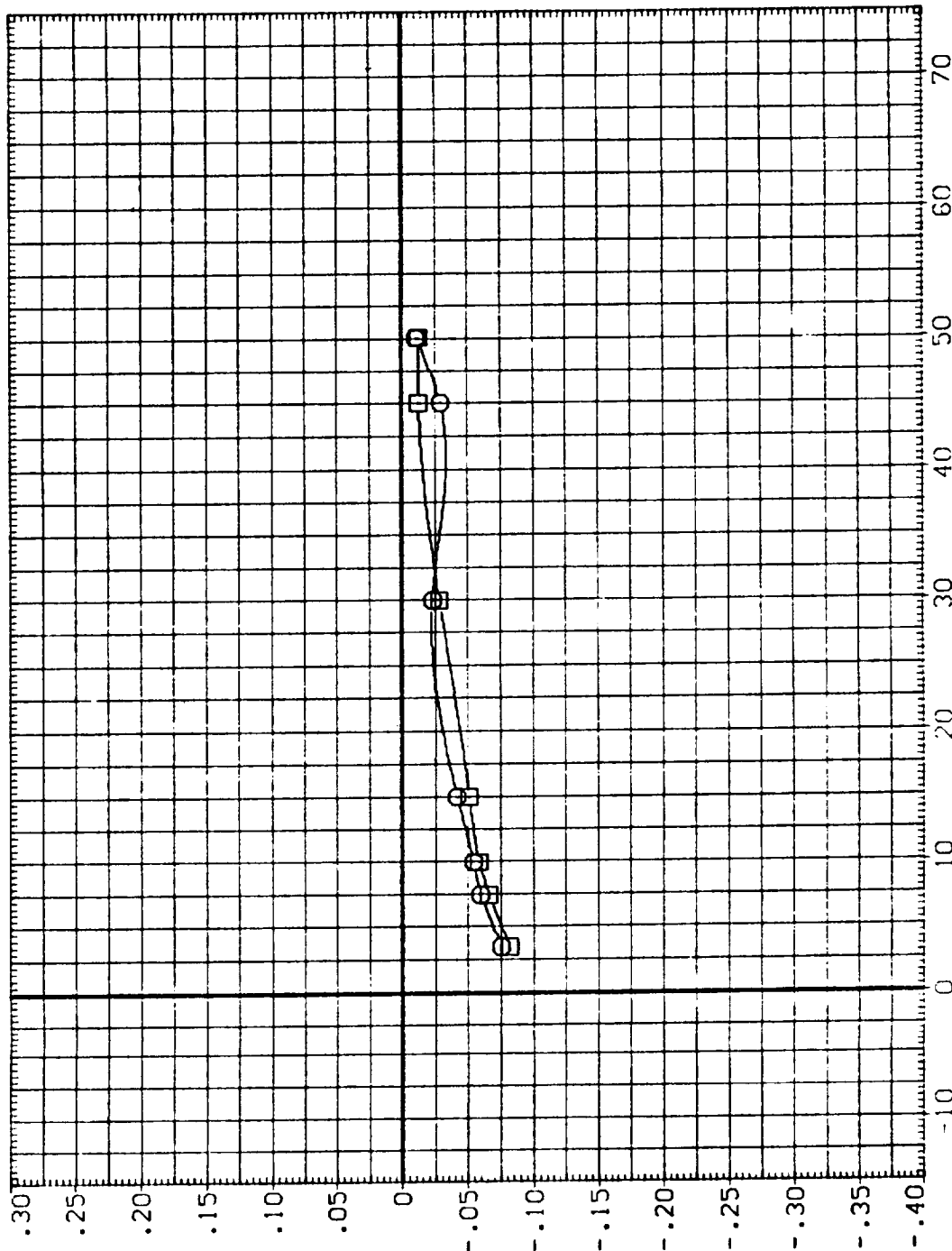


FIG. 35 EFFECT OF ORBITER ELEVONS ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
 (C)ALPHAC= 4.00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (PNH037)    ☐    ARC 14-120(CA238)    747/1 AT1 D3S1 (CARRIER DATA)  
 (PNH034)    ☐    ARC 14-120(CA238)    747/1 AT1 D3S1 (CARRIER DATA)

ORB    ELEVON    MACH    STAB  
 6.000    .000    .600    -1.000  
 6.000    .000    .600    5.000

REFERENCE INFORMATION  
 SREF    5500.0000    SQ.FT.  
 LREF    327.7800    IN.  
 BREF    2348.0400    IN.  
 XMRP    1339.9000    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 36 EFFECT OF CARRIER STAB ON CARRIER(ORB) ELEVONS AT 0.0 DEG., ORB T/C ON)

(A)ALPHAC= .00

DATA SET SYMBOL  
(PNH037)  
(PNH034)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)

IORB ELEVON MACH STAB  
6.000 .000 .600 -1.000  
6.000 .000 .600 5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
GREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

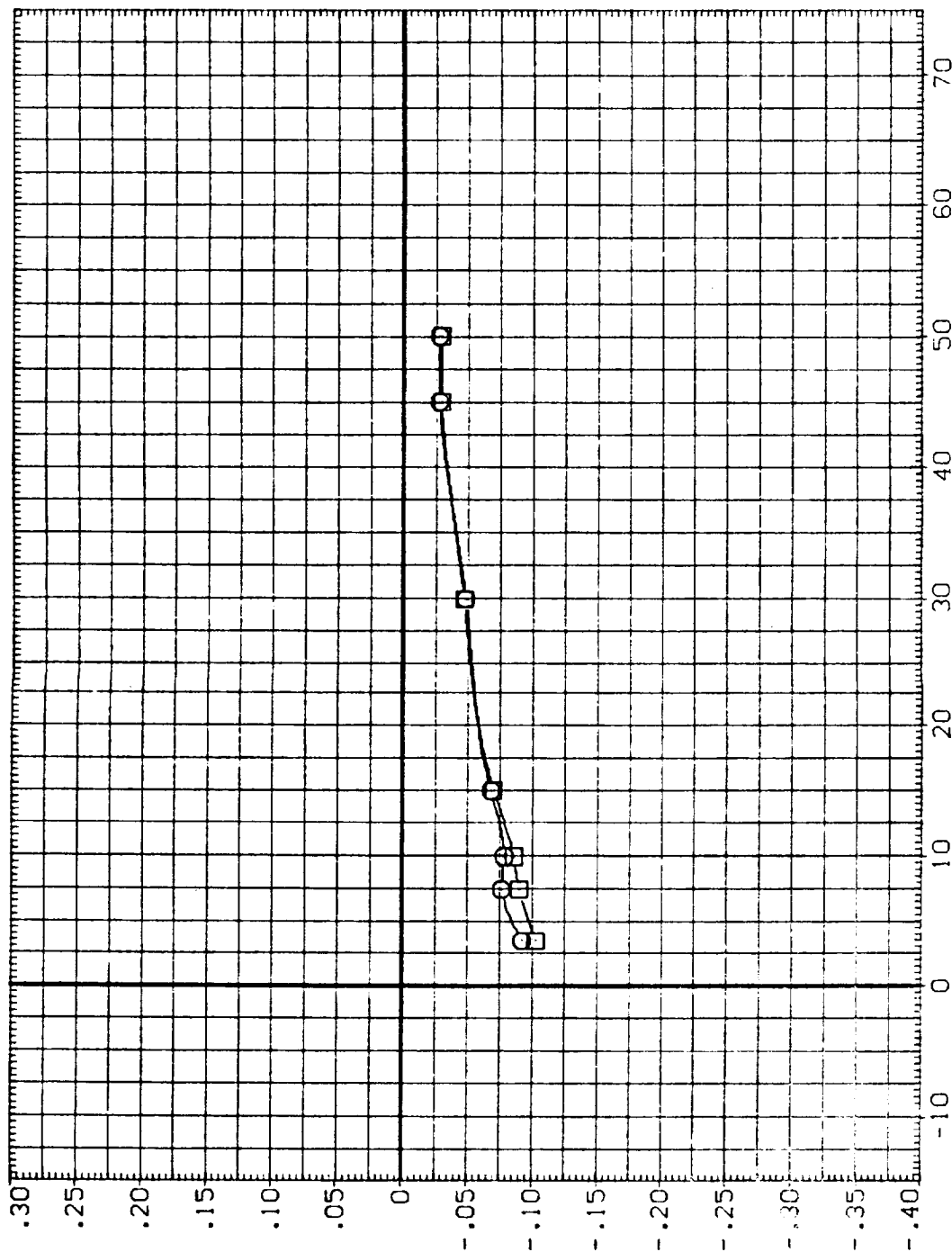


FIG. 36 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)  
(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PH037)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 50.FT.
(PH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

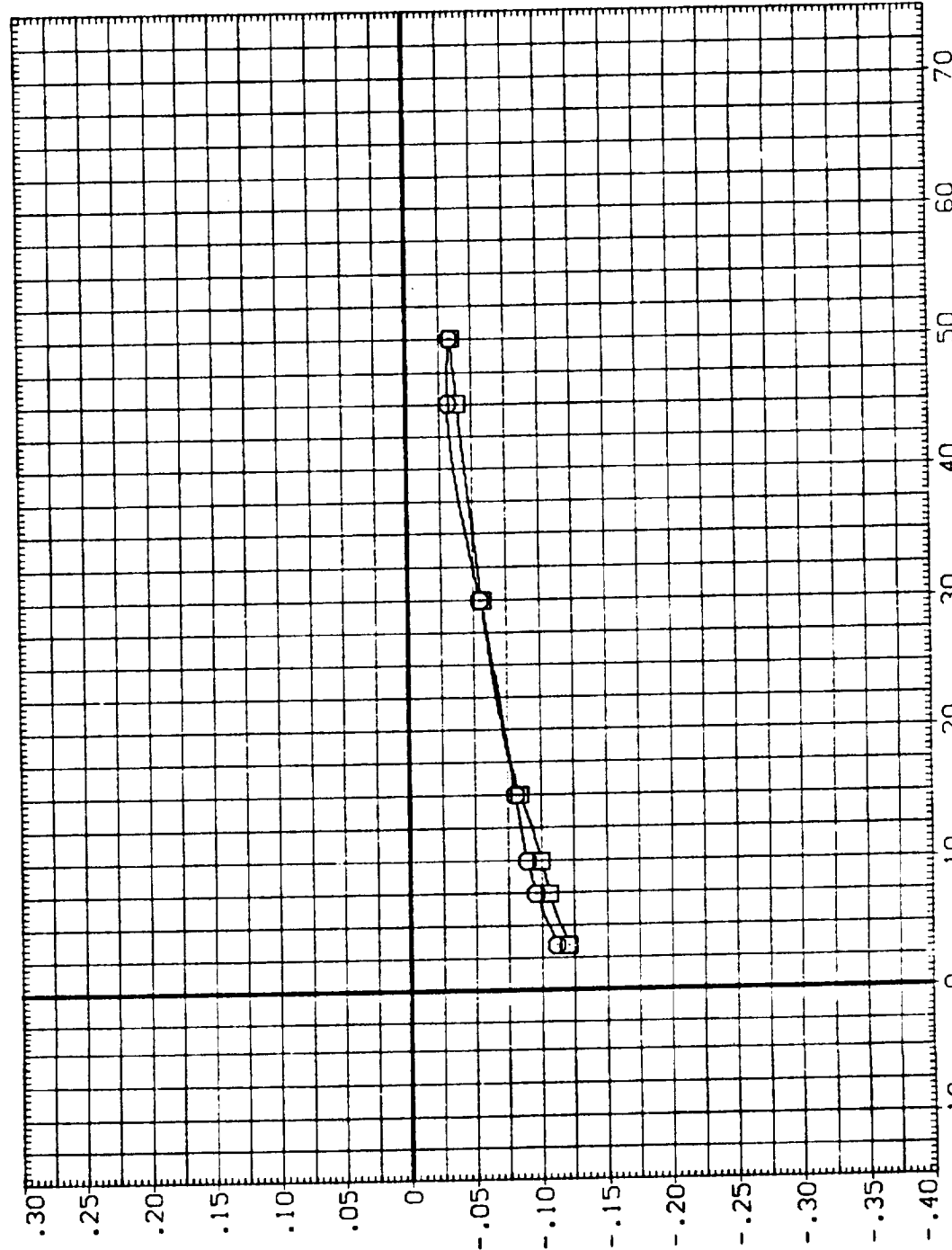
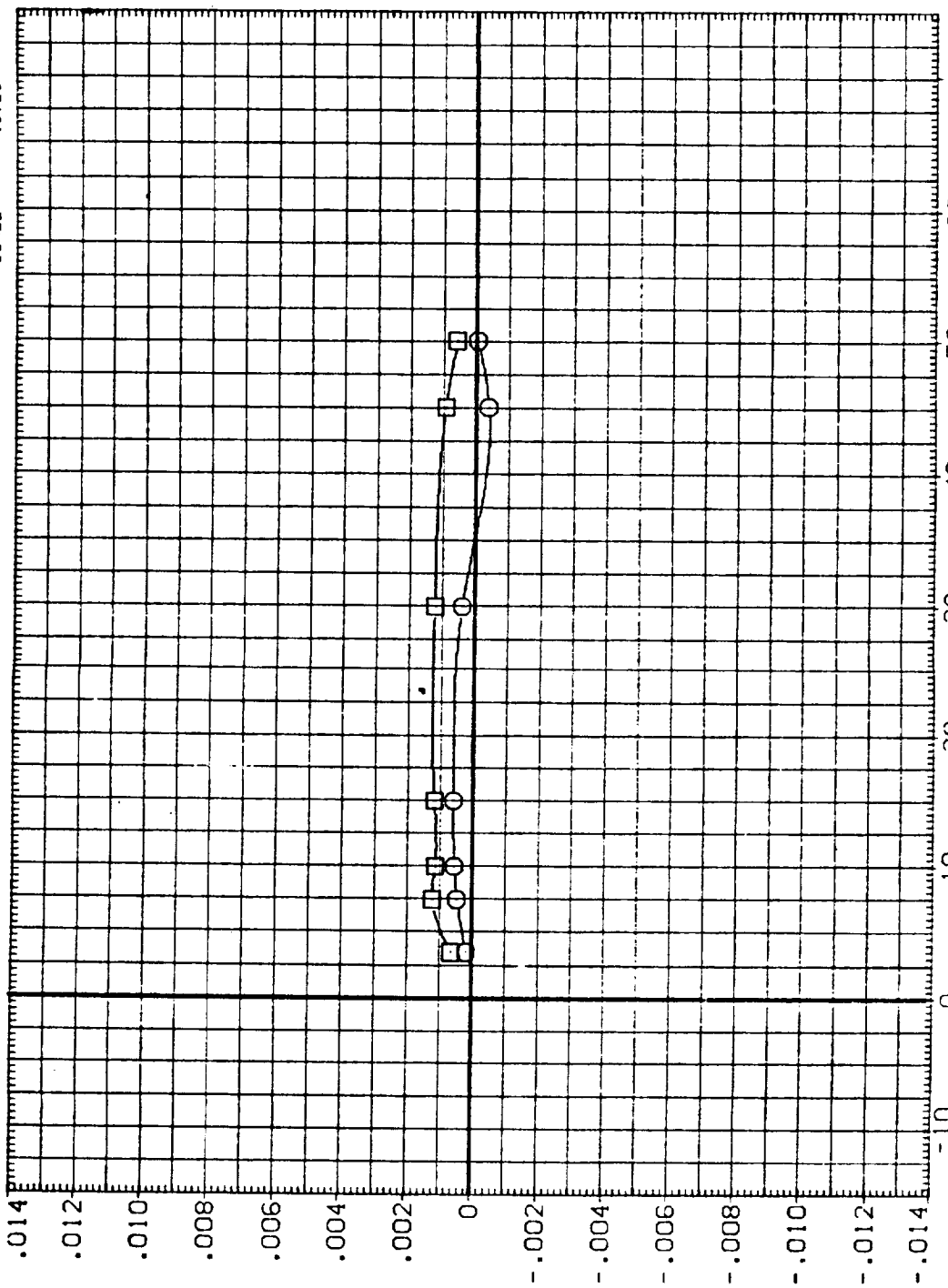


FIG. 36 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)  
(C)ALPHAC= 4.00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (PNH037)    ☐    ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
 (PNH034)    ☐    ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

ORBITER    ELEVON    MACH    STAB  
 6.000    .000    .600    -1.000  
 6.000    .000    .600    5.000



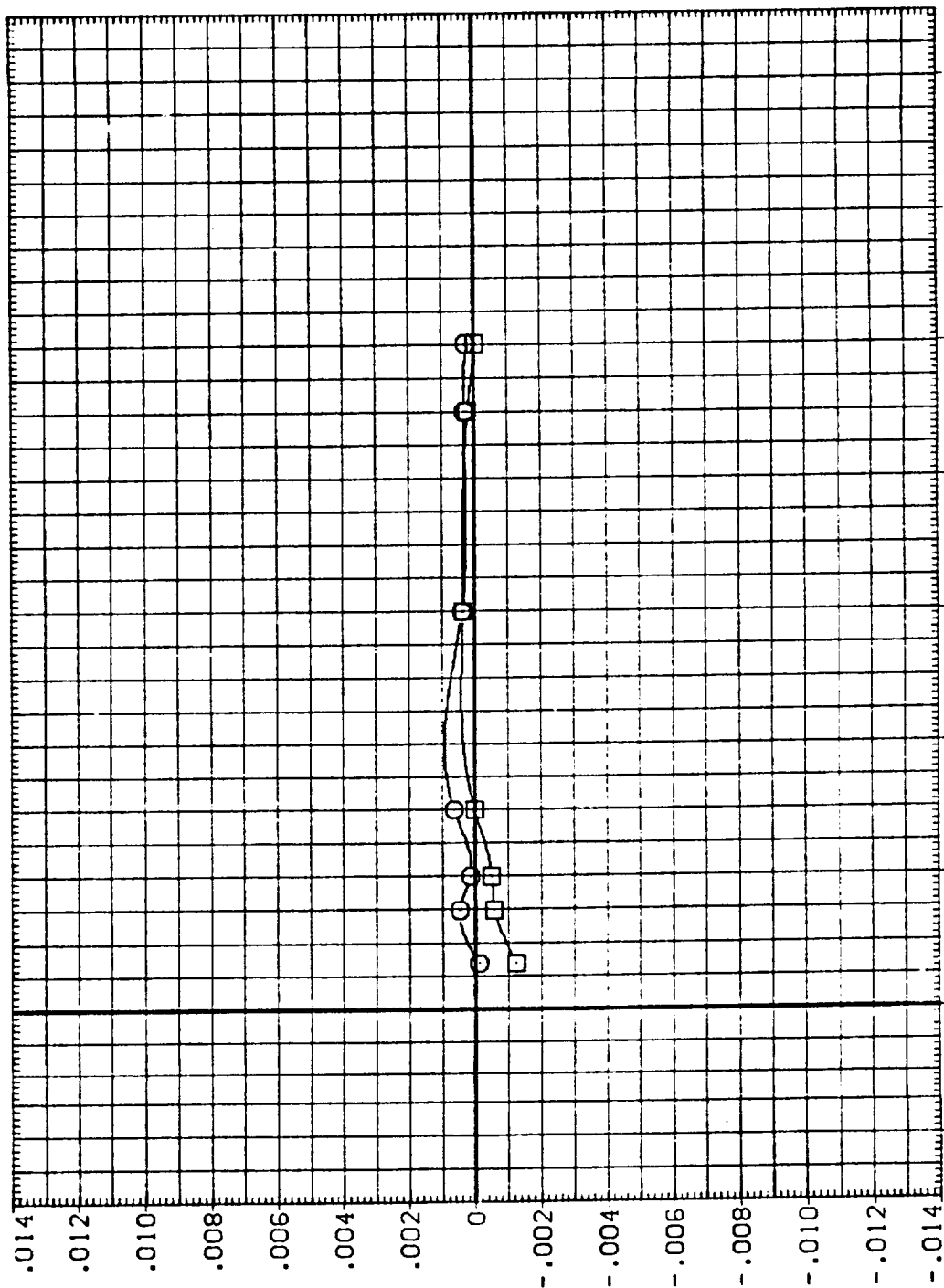
ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ. FT.

FIG. 36 EFFECT OF CARRIER STAB ON CARRIER(ORB) ELEVONS AT 0.0 DEG., ORB T/C ON)

(A)ALPHAC= .00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH037)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH034)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. AC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL DRAG FORCE COEFFICIENT, DCD

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 36 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)

(B)ALPHAC= 2.00

DATA SET SYMBOL (PNH037) (PNH034) CONFIGURATION DESCRIPTION ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA) 747/1 AT1 03S1 (CARRIER DATA) IORB 6.000 6.000 ELEVON .000 .000 MACH .600 .600 STAB -1.000 5.000 REFERENCE INFORMATION SREF 5500.0000 SQ.FT. LREF 377.7800 IN. BREF 2348.0400 IN. XMRP 1339.9000 IN. YMRP .0000 IN. ZMRP 190.7500 IN. SCALE .0125

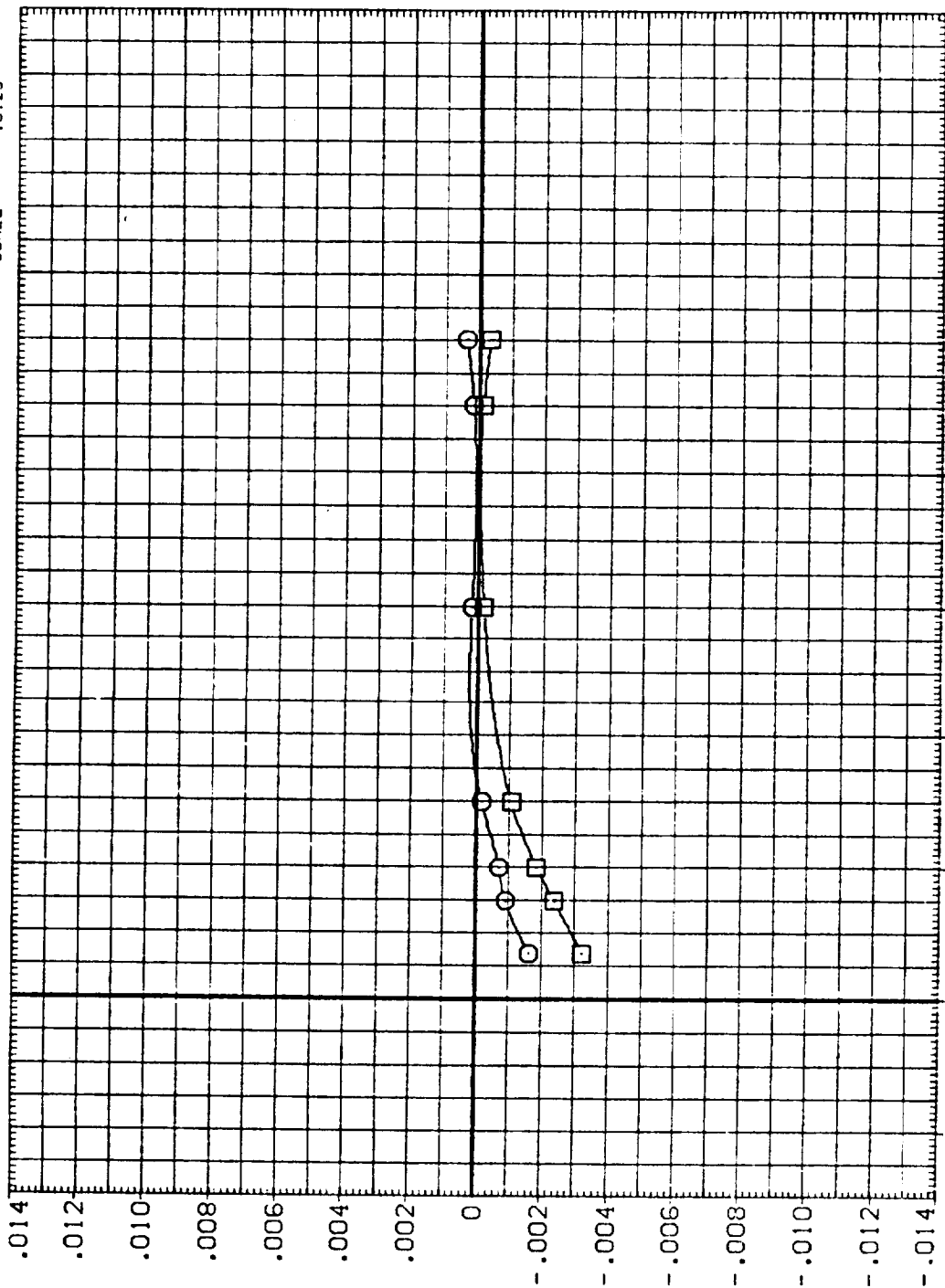
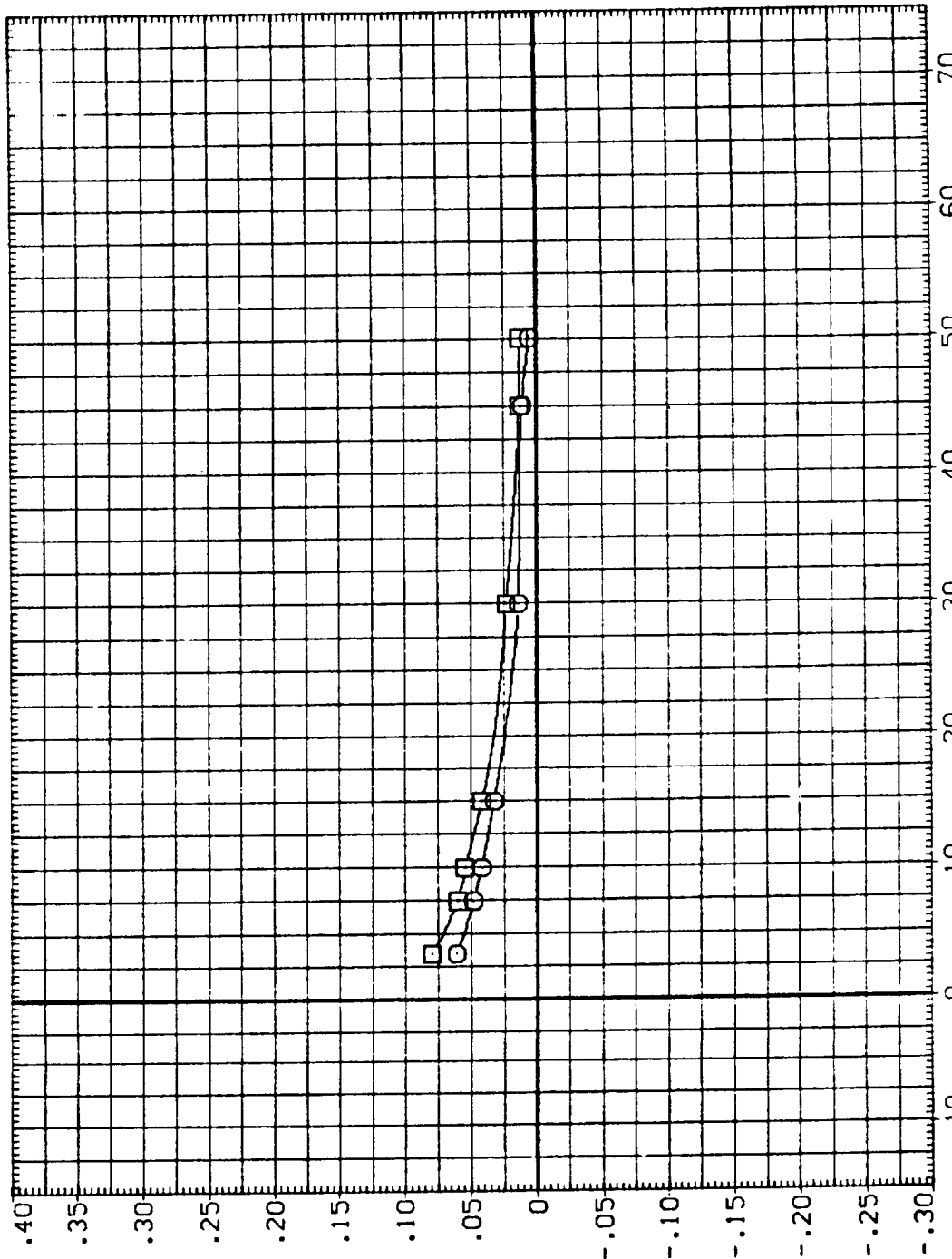


FIG. 36 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)  
(C)ALPHAC= 4.00 PAGE 288

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (PNH037)    ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
 (PNH034)    ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)

IORB    ELEVON    MACH    STAB  
 6.000    .000    .600    -1.000  
 6.000    .000    .600    5.000

REFERENCE INFORMATION  
 SREF    5500.0000    50. FT.  
 LREF    327.7500    IN.  
 BREF    2348.0400    IN.  
 XMRP    1339.0000    IN.  
 YMRP    190.7500    IN.  
 ZMRP    0.0000    IN.  
 SCALE    0.0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 36 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)

(A)ALPHAC= .00

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(PNH037) ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
(PNH034) ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
6.000 .000 .600 -1.000 SREF 5500.0000 SO.FT.  
6.000 .000 .600 5.000 LREF 327.7800 IN.  
BREF 2348.0400 IN. XC  
XMRP 1.339.9000 IN. YC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

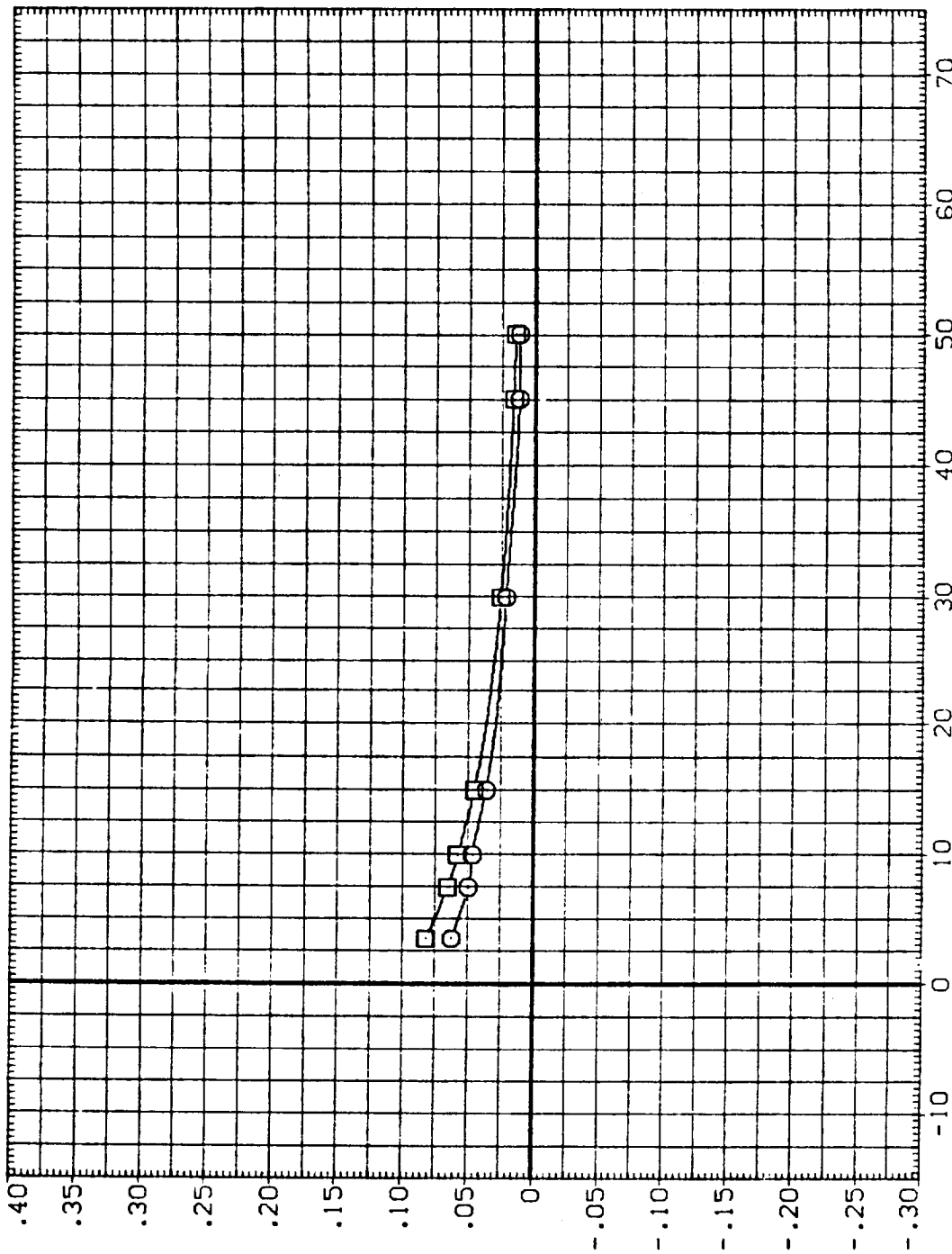


FIG. 36 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)

(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNIH037)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 50.FT.
(PRH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

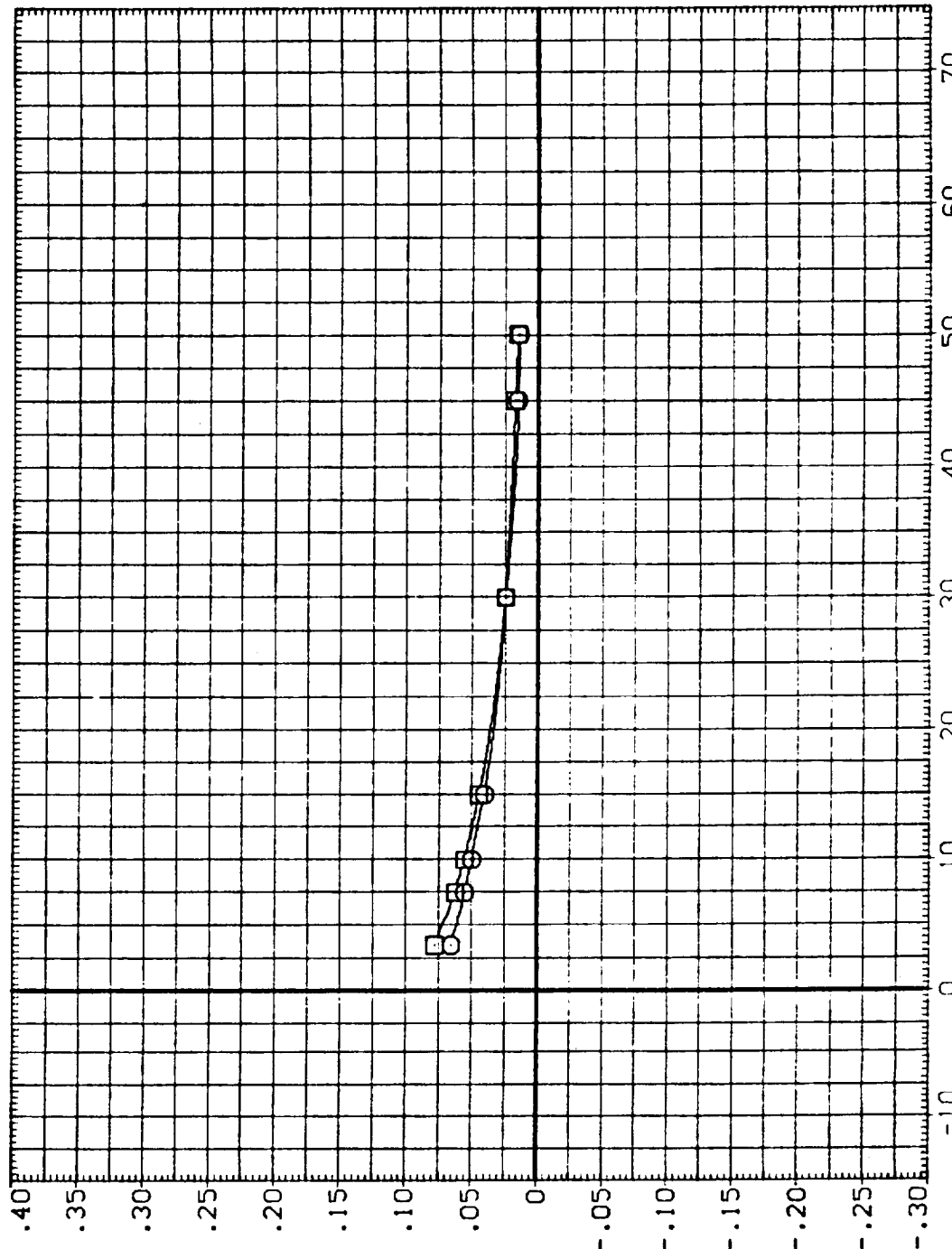


FIG. 36 EFFECT OF CARRIER STAB ON CARRIER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	10RB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA238) 747/1 AT1 Q3S1 (ORBITER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH034)	ARC 14-120(CA238) 747/1 AT1 Q3S1 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

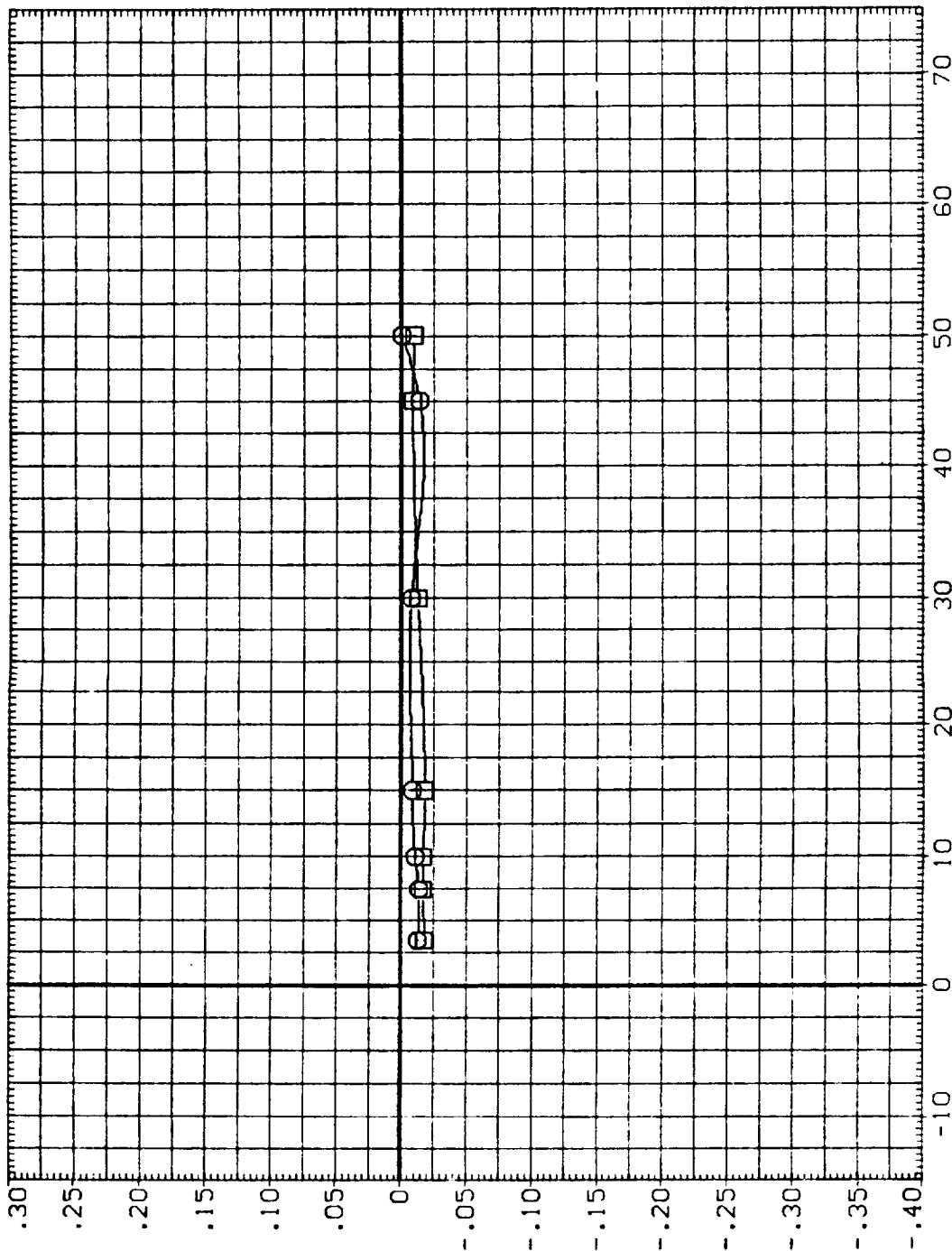
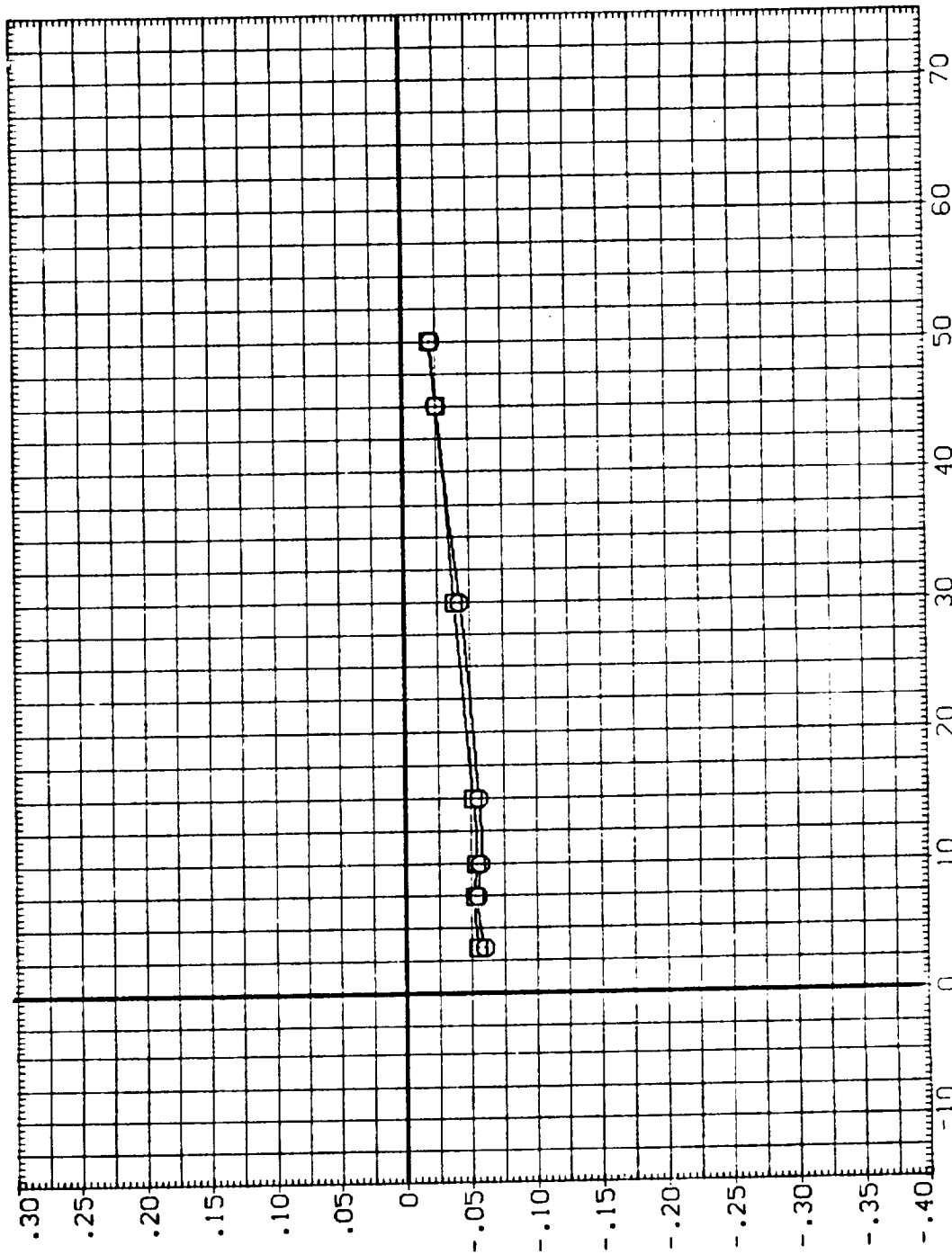


FIG. 37 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)

(A)ALPHAC= .00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 SQ. FT.
(4NH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 37 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)

(B)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NH037) ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)

(4NH034) ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)

IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
6.000	.000	.600	-1.000	SREF	2690.0000	50. FT.	
6.000	.000	.600	5.000	LREF	474.8100	IN.	
				BREF	936.6800	IN.	X9
				YMRP	1109.0000	IN.	Y9
				ZMRP	375.0000	IN.	Z9
				SCALE	.0125		

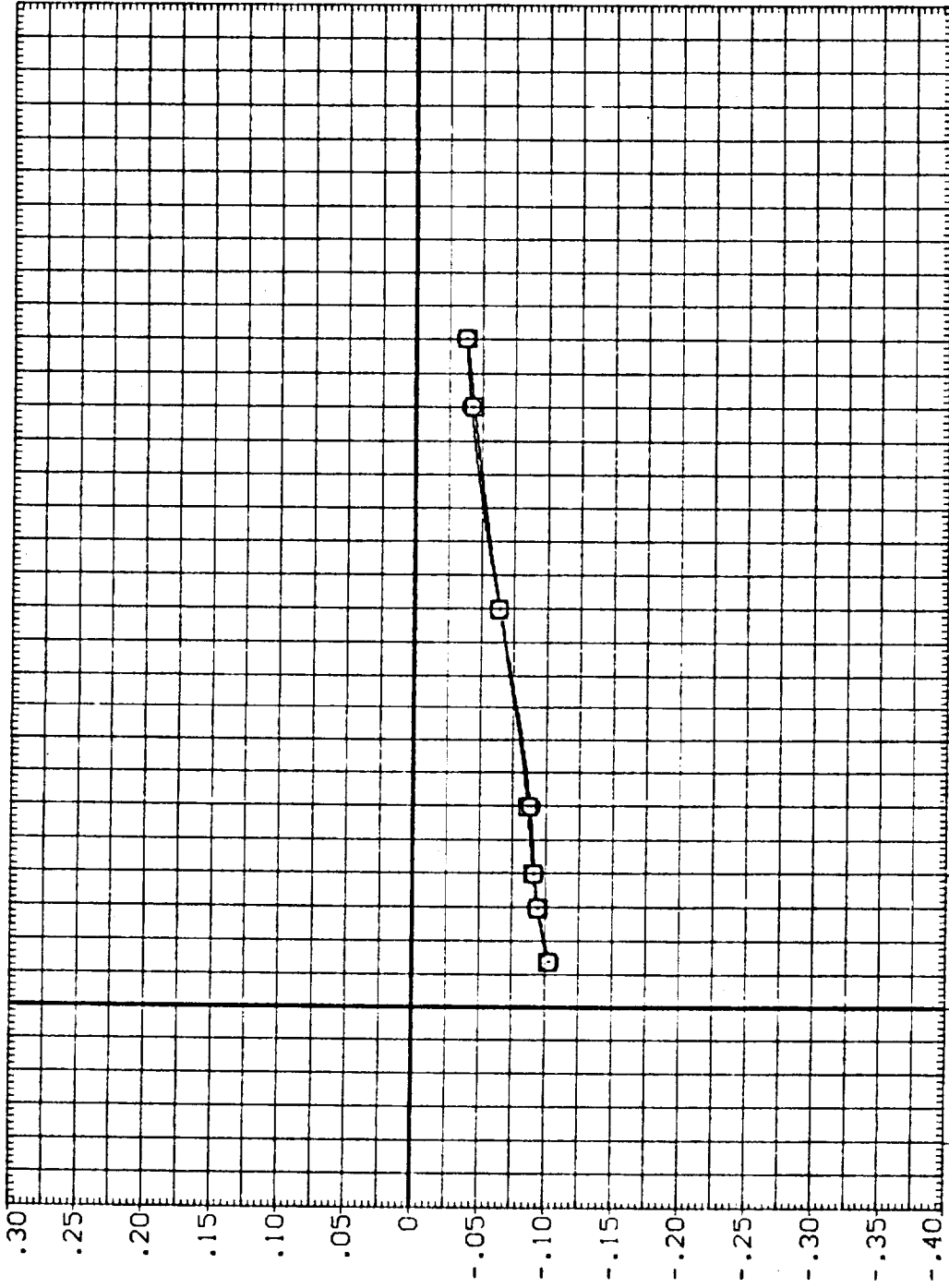


FIG. 37 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)

(C)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOFB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITTER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITTER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

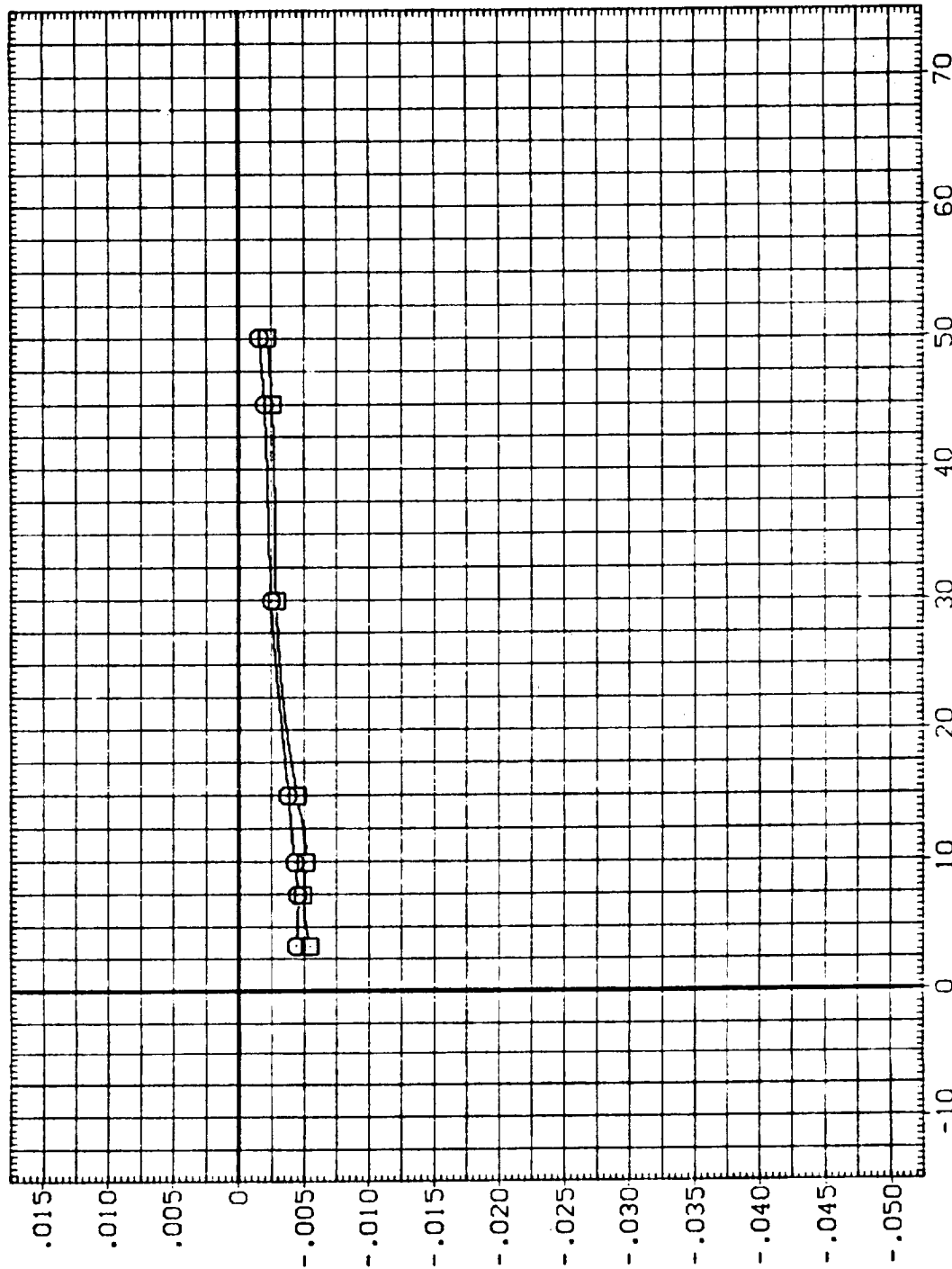


FIG. 37 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB 1/C ON)

(A)ALPHAC= .00

ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
6.000	.000	.600	-1.000	SREF	2690.0000 50.FT.
6.000	.000	.600	5.000	LREF	474.8100 IN.
				BREF	936.6800 IN.
				XMRP	1109.0000 IN. X0
				YMRP	.0000 IN. Y0
				ZMRP	375.0000 IN. Z0
				SCALE	.0125



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DATA SET SYMBOL  
(4NH037)  
(4NH034)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT 0351 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT 0351 (ORBITER DATA)

IORB  
5.000  
5.000

ELEVON  
.000  
.000

MACH  
.600  
.600

STAB  
-1.000  
5.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

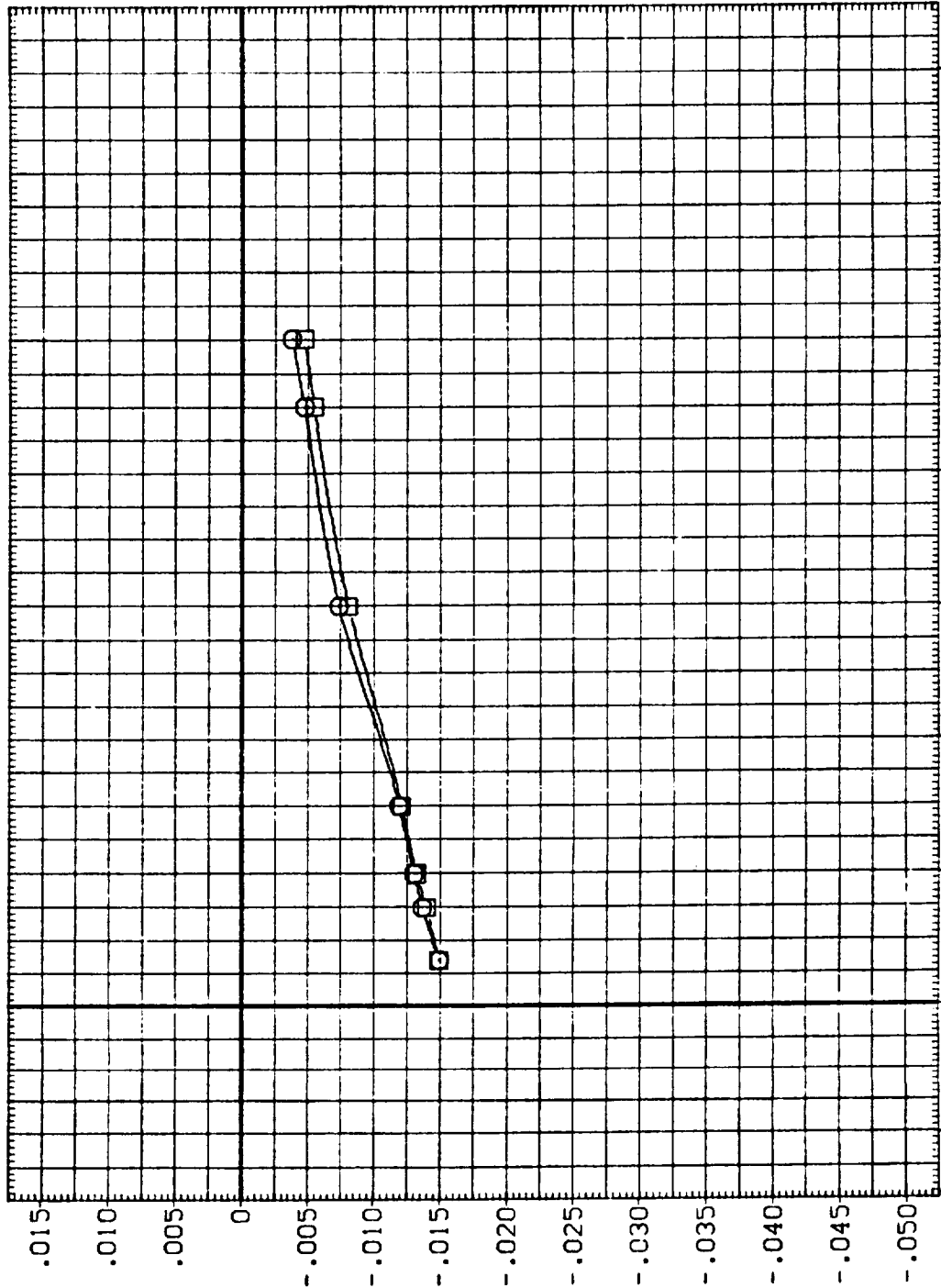


FIG. 37 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

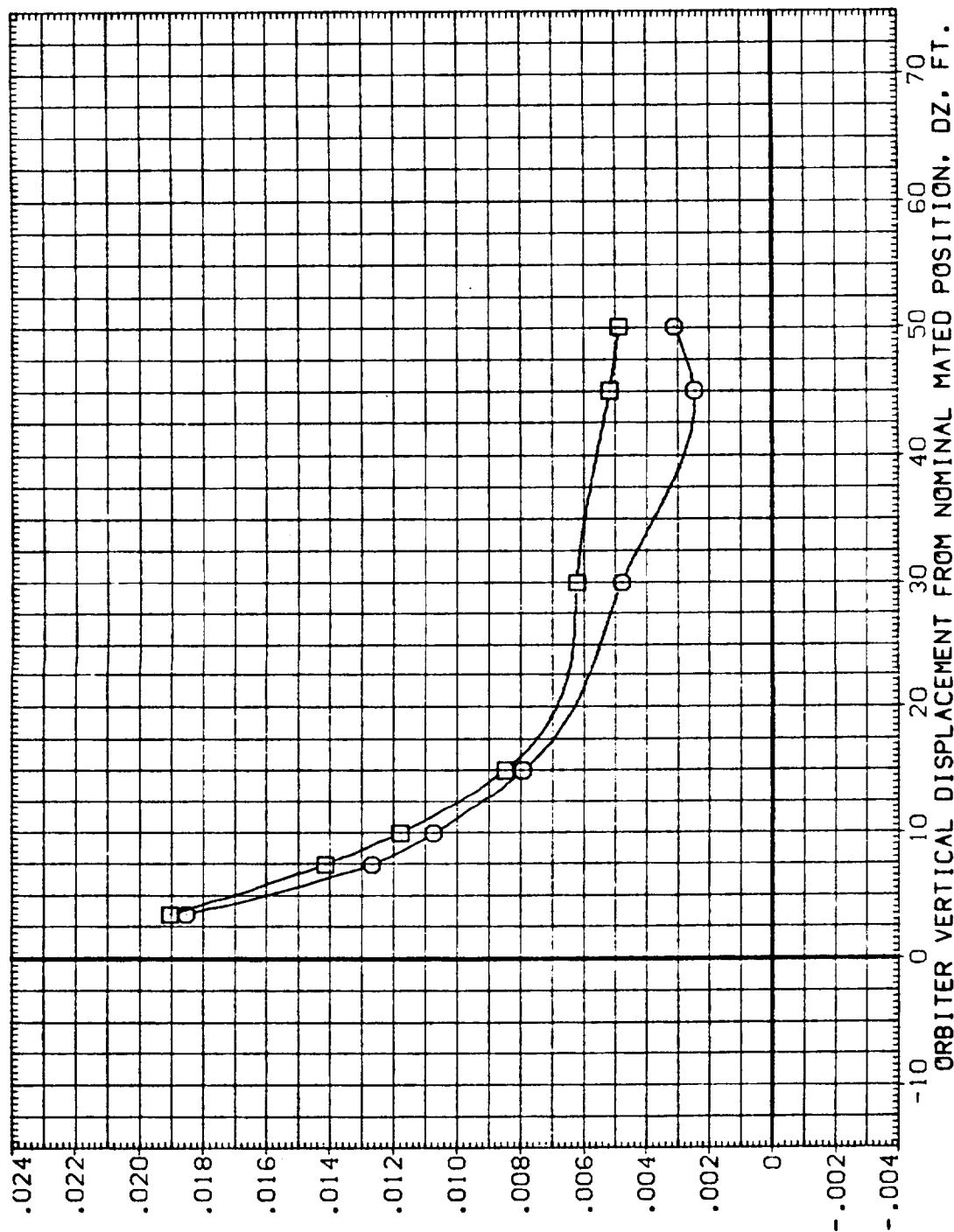
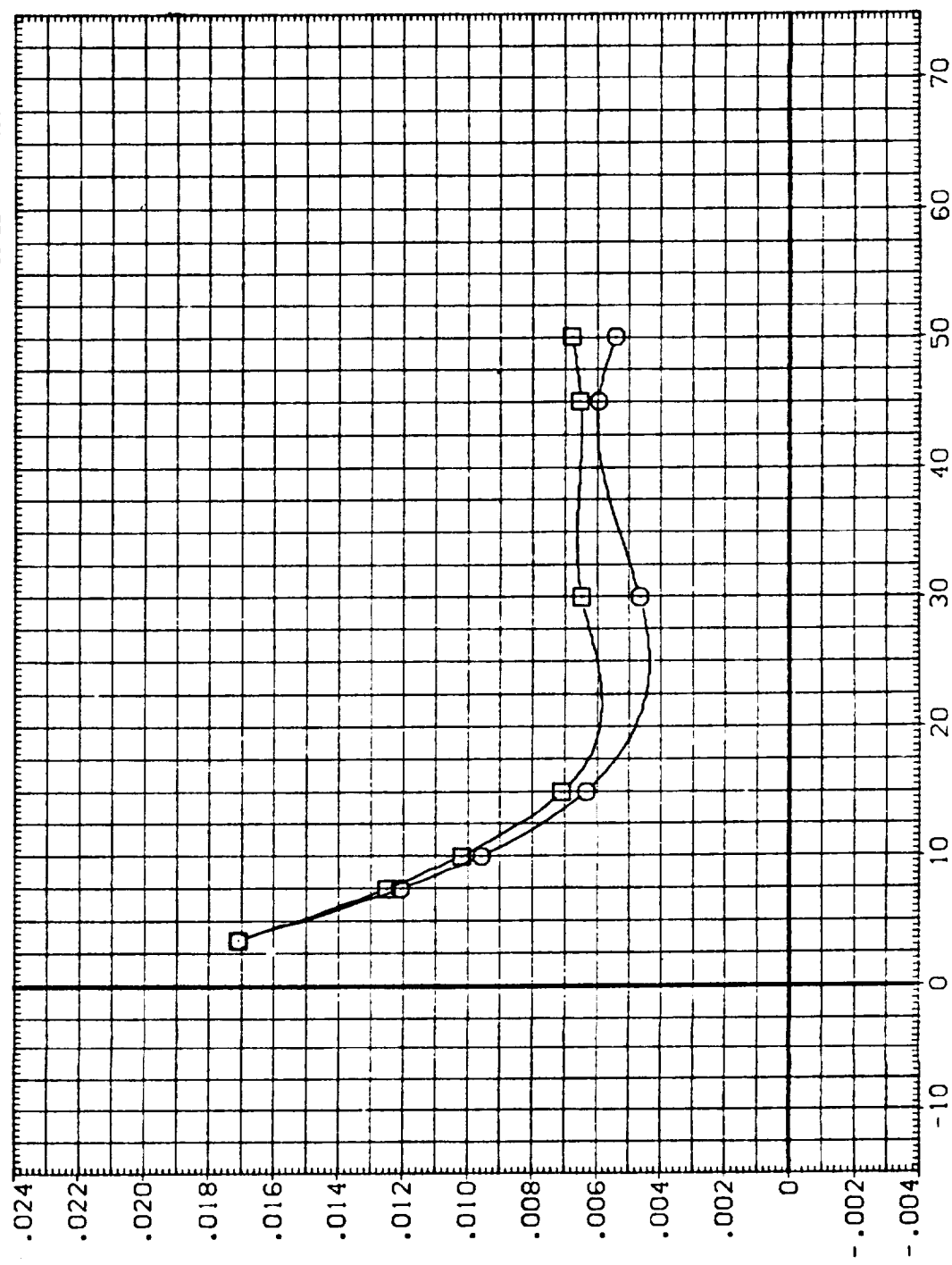


FIG. 37 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.500	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 37 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB 1/C ON)

(B)ALPHAC= 2.00

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INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH037) ☐ ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)  
 (4NH034) ☐ ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)

10RB 6.000 6.000  
 ELEVON .000 .000  
 MACH .800 .800  
 STAB -1.000 5.000  
 REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

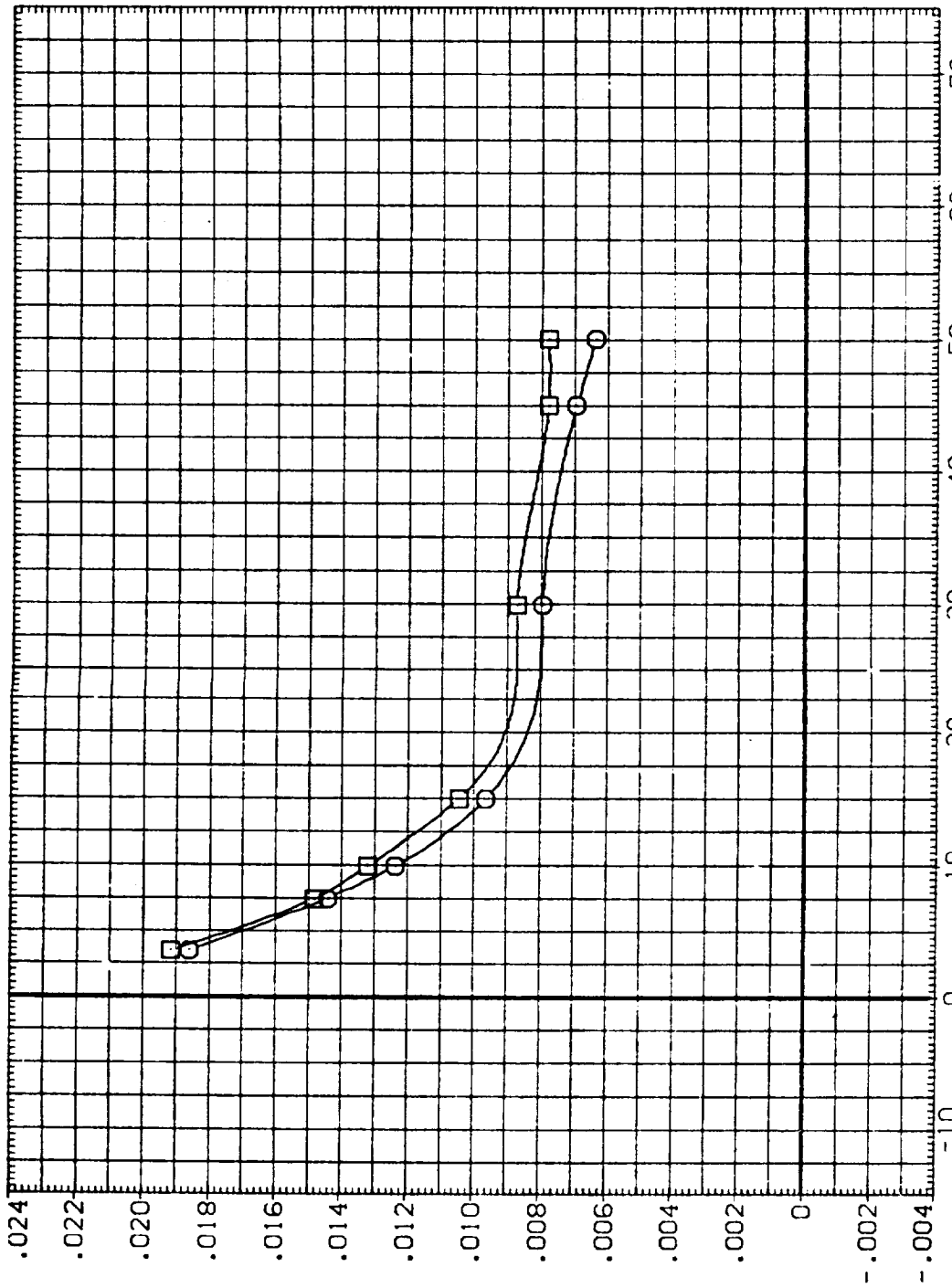


FIG. 37 EFFECT OF CARRIER STAB ON ORBITER(ORB ELEVONS AT 0.0 DEG., ORB T/C ON)

(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX34)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNHX28)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
(PNHX31)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	20.000	.000	6.000	.600	BREF 2348.0400 IN. X
						XMRP 1339.9000 IN. Y
						VMRP .0000 IN. Z
						ZMRP 190.7500 IN. Z
						SCALE .0125

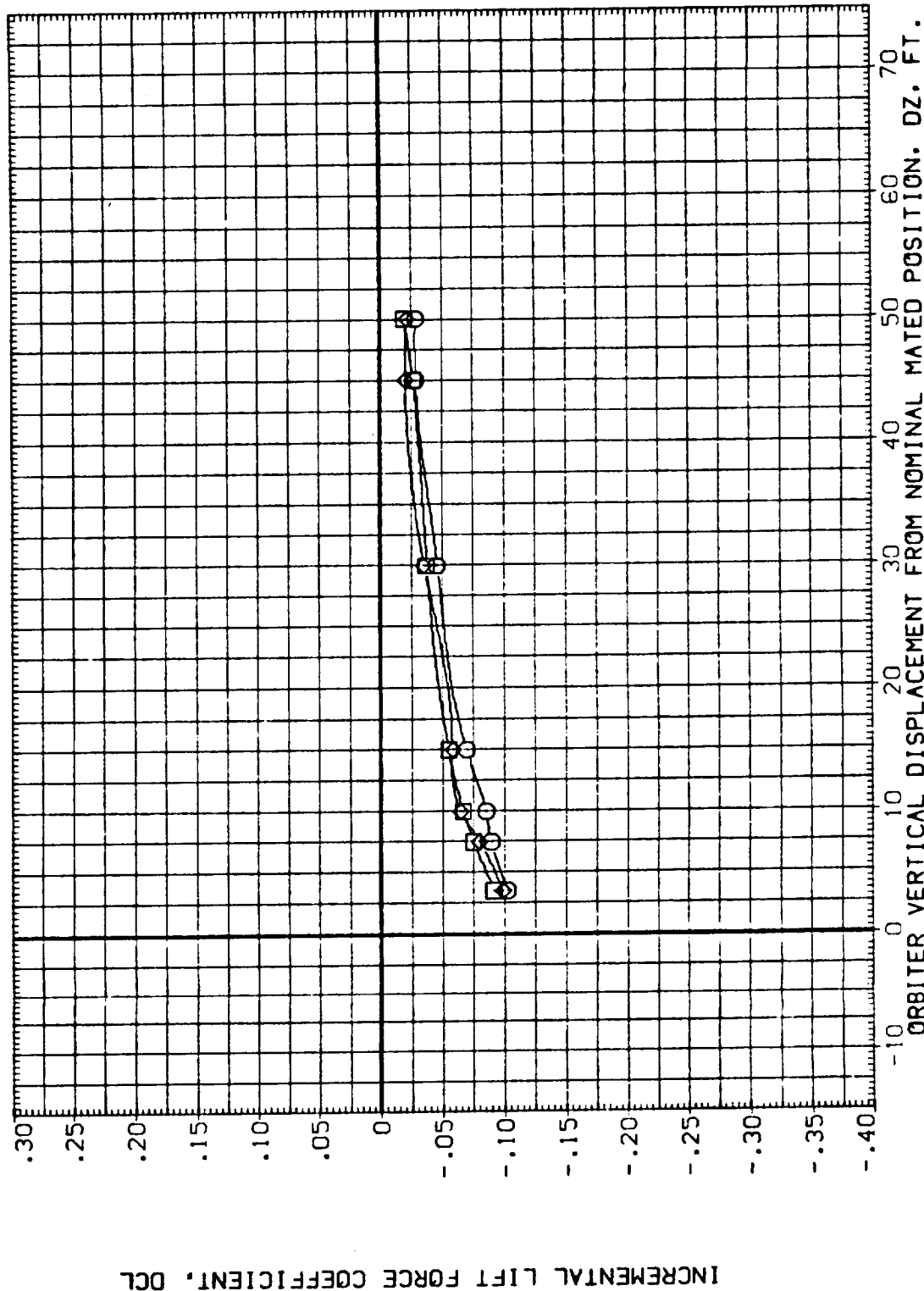


FIG. 38 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
(A)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNHX34) ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
 (PNHX28) ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
 (PNHX31) ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)

DX  
 .000  
 10.000  
 20.000

ELEVON  
 .000  
 .000  
 .000

MACH  
 .600  
 .600  
 .600

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

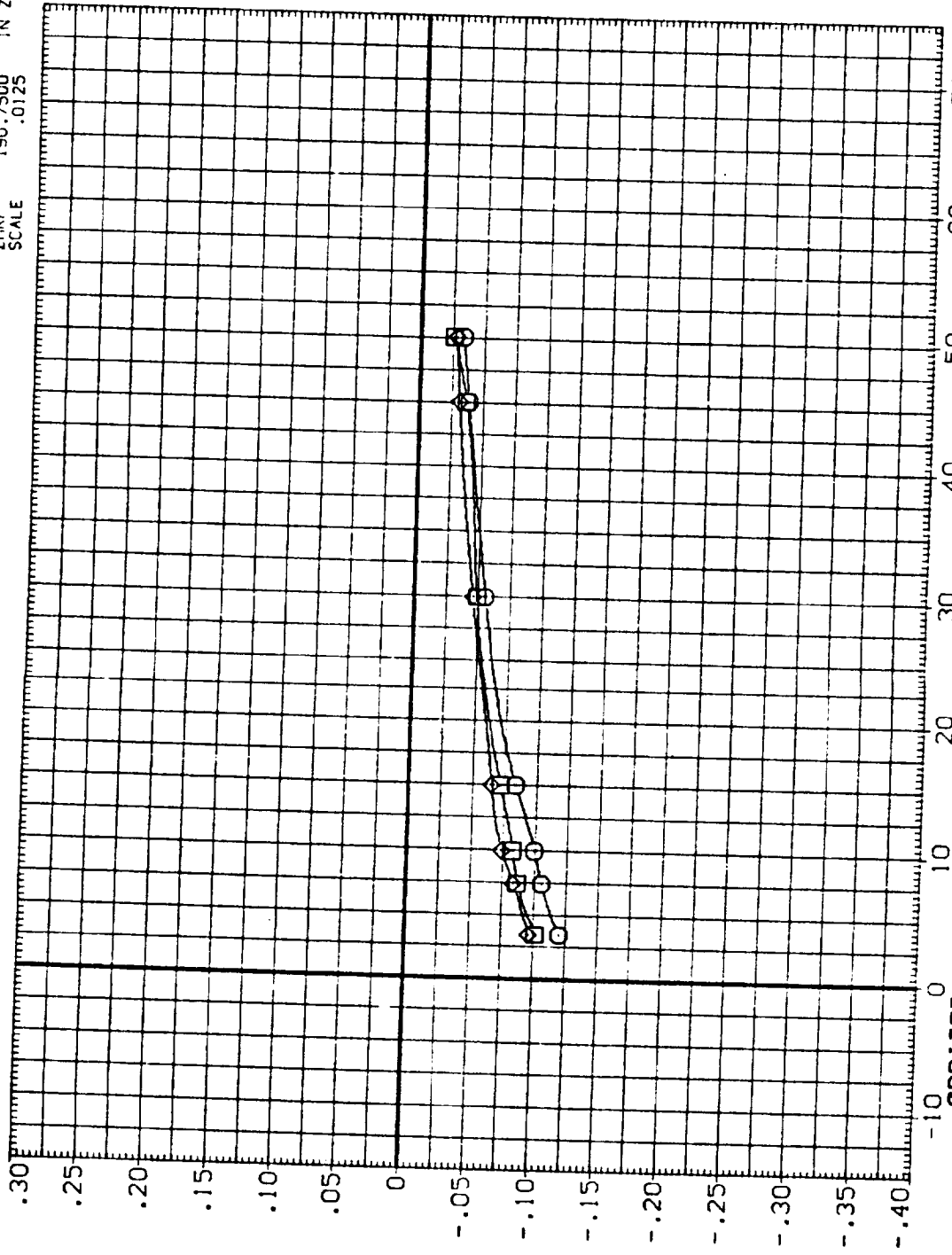


FIG. 38 EFFECT OF ORBITER DX ON CARRIER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
 (B) ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX34)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 50.FT.
(PNHX28)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
(PNHX31)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	20.000	.000	6.000	.600	BREF 2348.0400 IN.
						YHRP 1339.9000 IN. XC
						ZHRP 190.7500 IN. ZC
						SCALE .0125

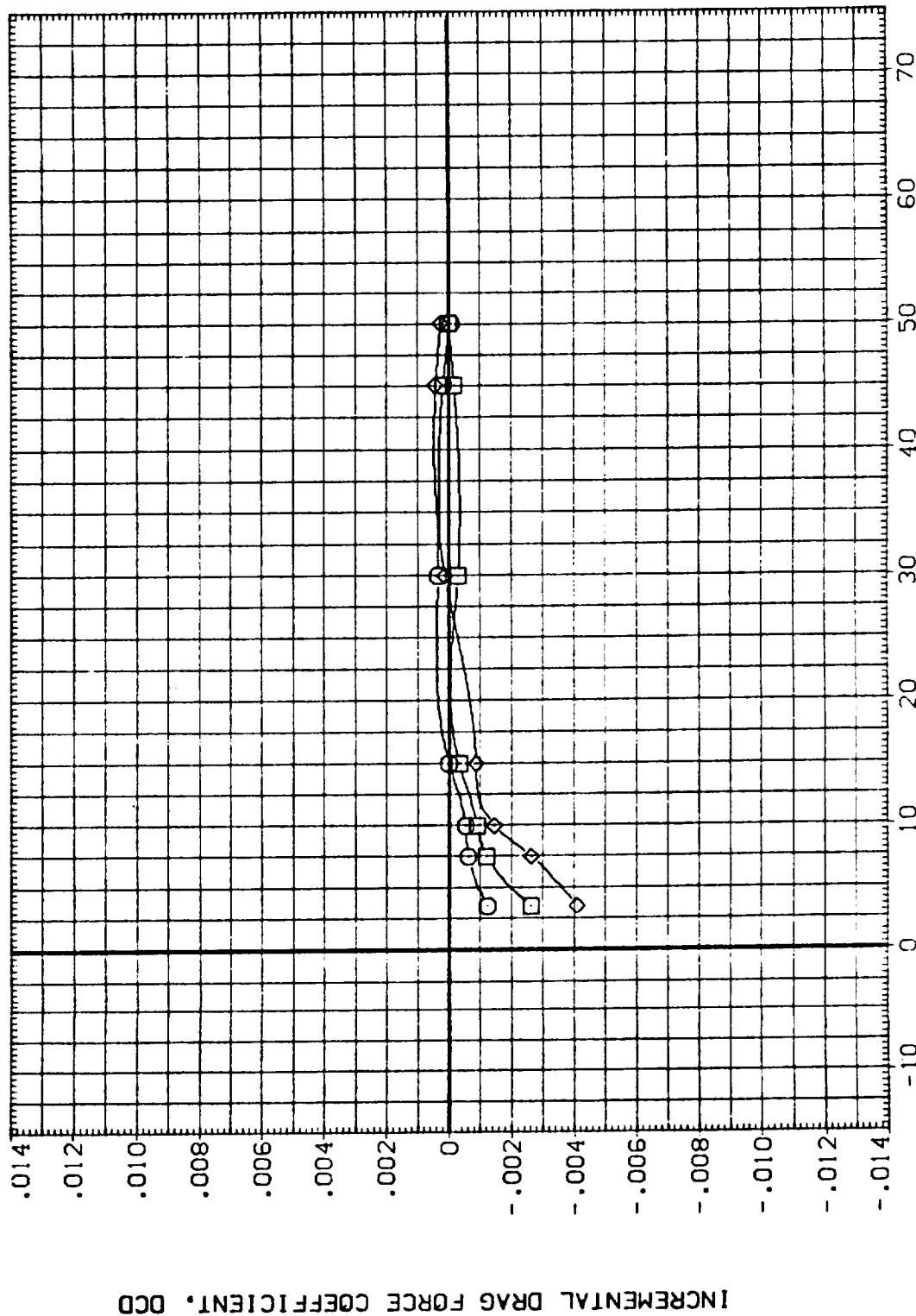


FIG. 38 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL

CONFIGURATION DESCRIPTION

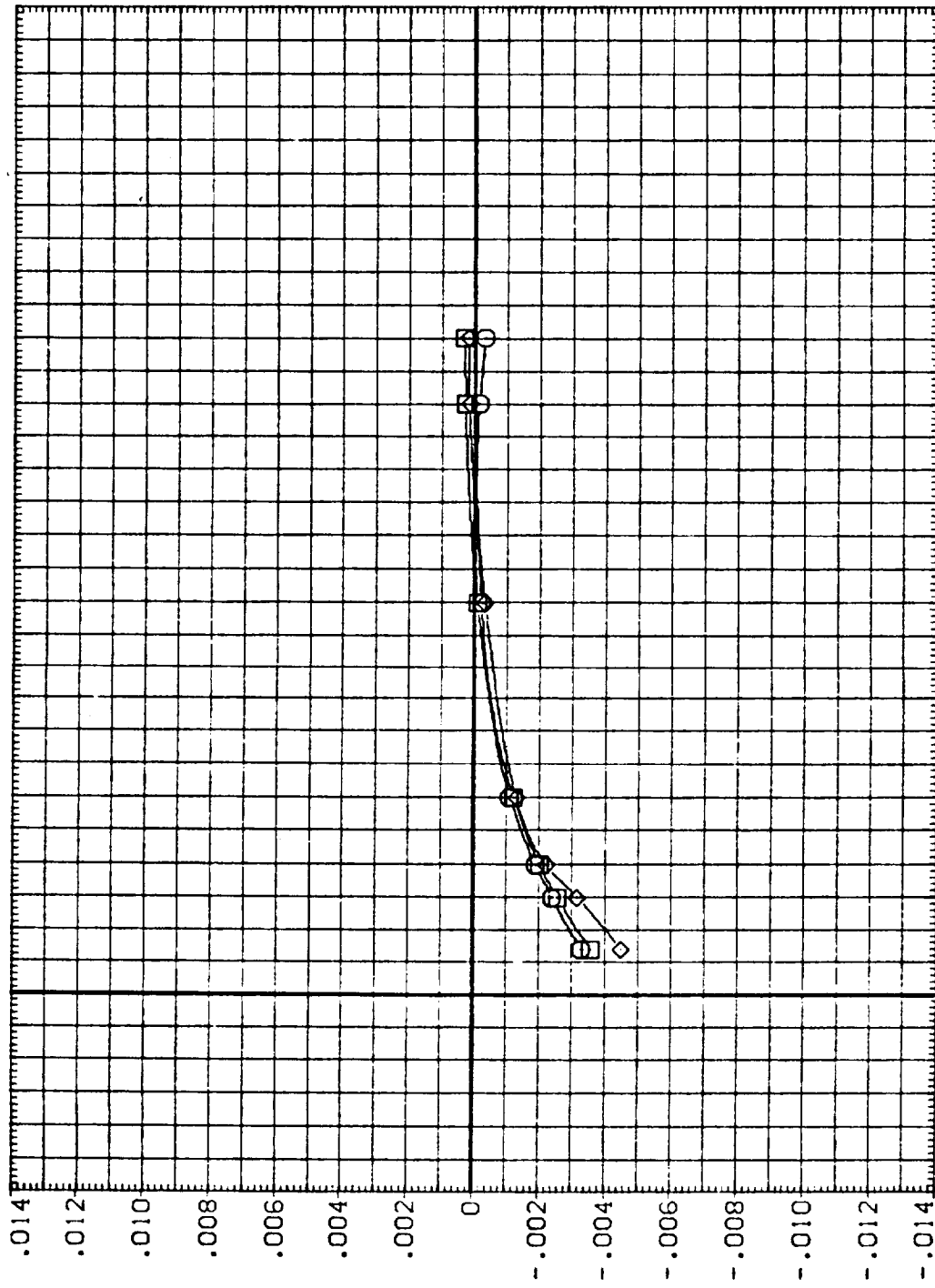
DX

ELEVON

IORB

MACH

REFERENCE INFORMATION



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 38 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX34)	ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 50.FT.
(PNHX28)	ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
(PNHX31)	ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)	20.000	.000	6.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

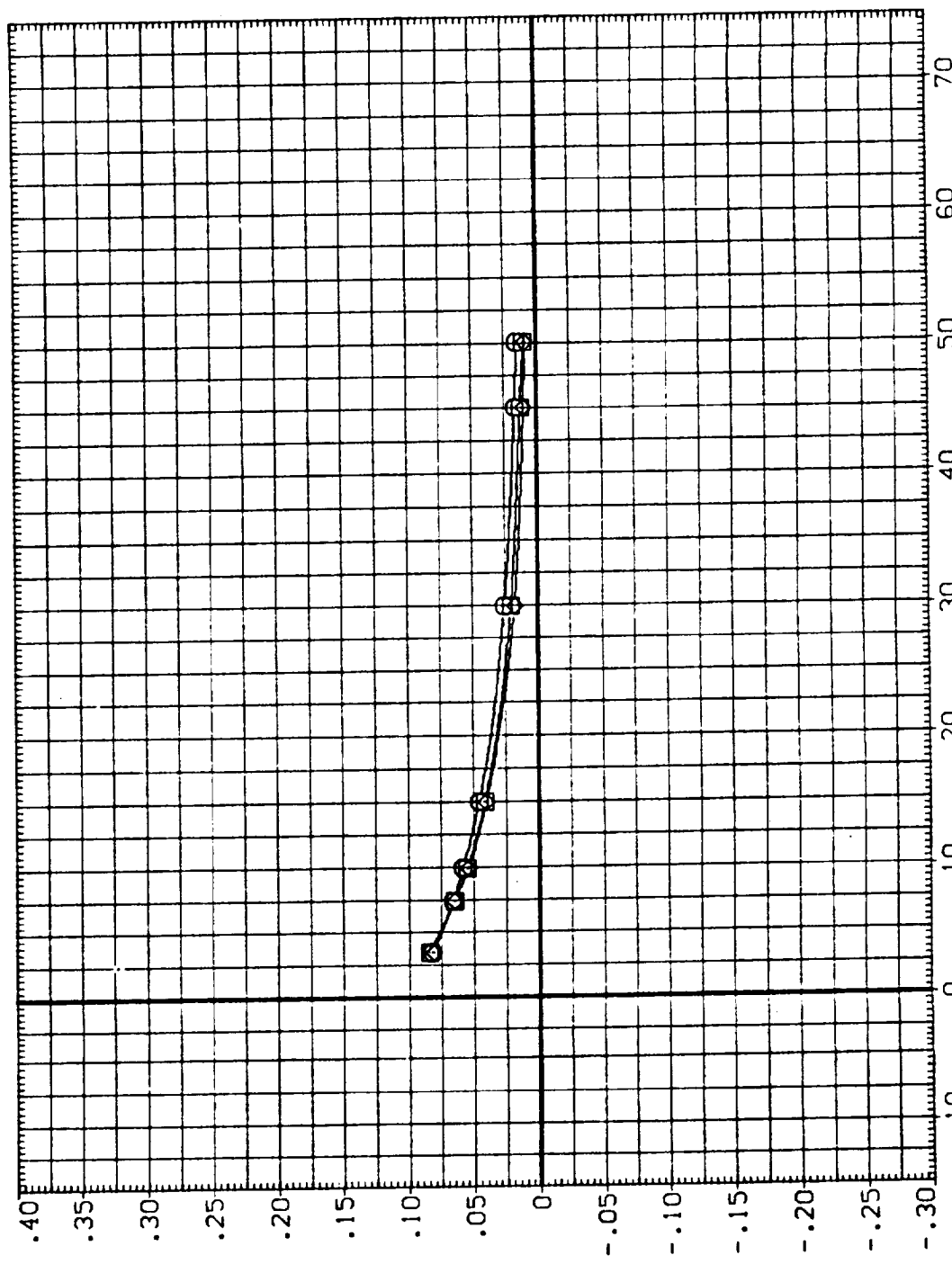
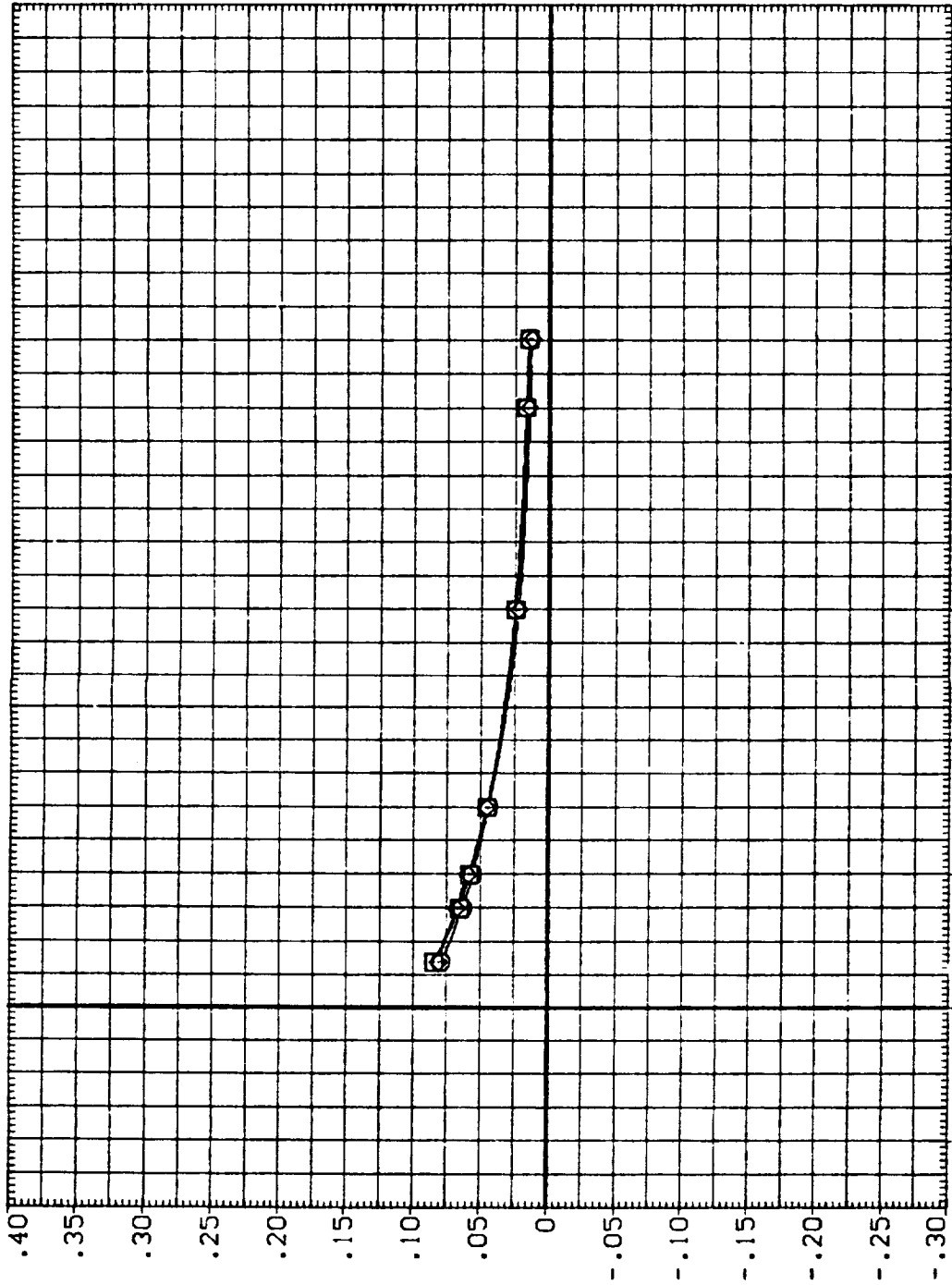


FIG. 38 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEV/DN	IORB	MACH	REFERENCE INFORMATION
(PNHX34)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 SQ. FT.
(PNHX28)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
(PNHX31)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	20.000	.000	6.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 38 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB 1/C ON, IORB= 6.0 DEG)

(B)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX34)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NHX28)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
(4NHX31)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	20.000	.000	6.000	.600	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP 375.0000 IN. Y0
						SCALE .0125

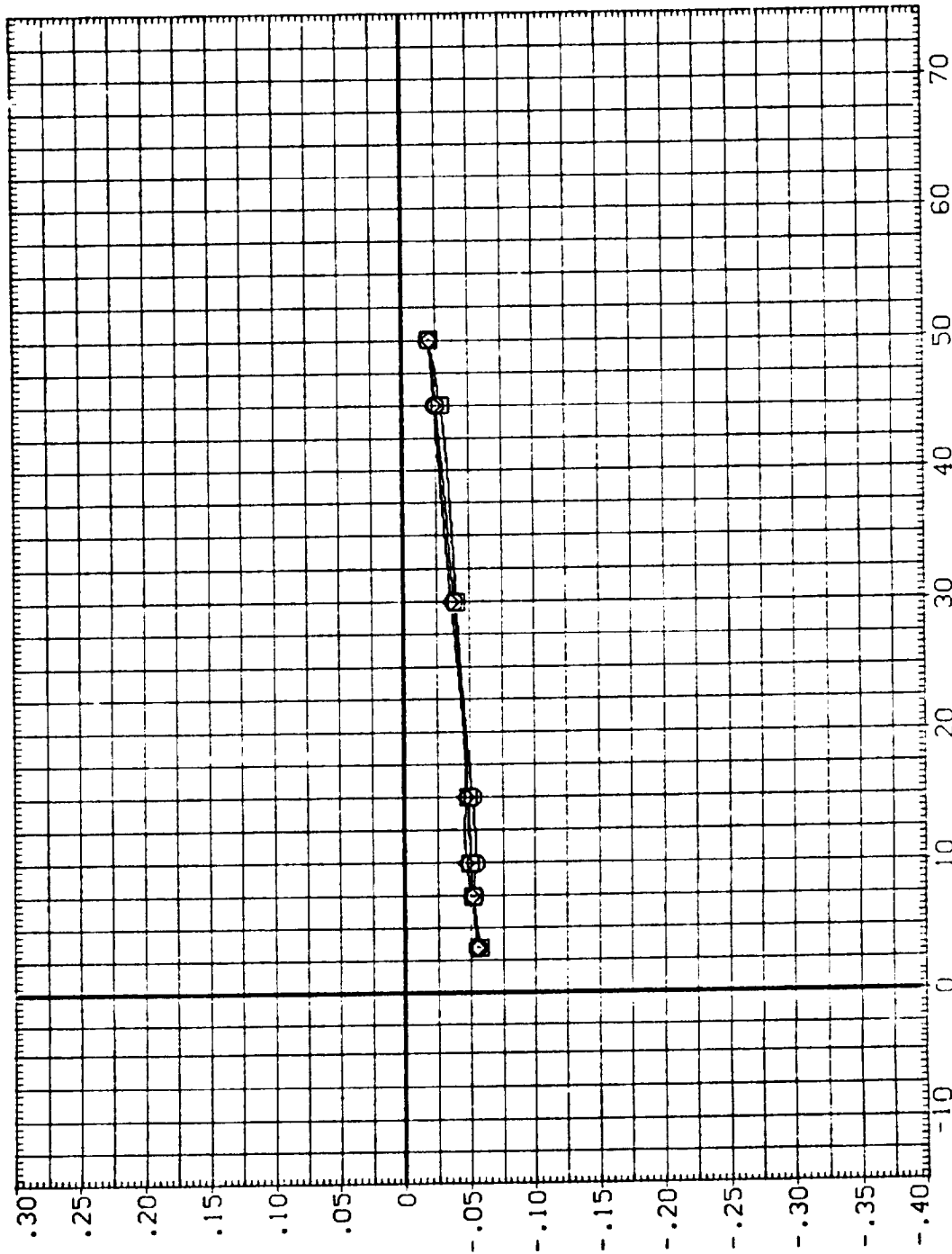


FIG. 39 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEV ON	IORB	MACH	REFERENCE INFORMATION
(4NHX34)	ARC 14-120(CA23B)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NHX28)	ARC 14-120(CA23B)	10.000	.000	6.000	.600	LREF 474.8100 IN.
(4NHX31)	ARC 14-120(CA23B)	20.000	.000	6.000	.600	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

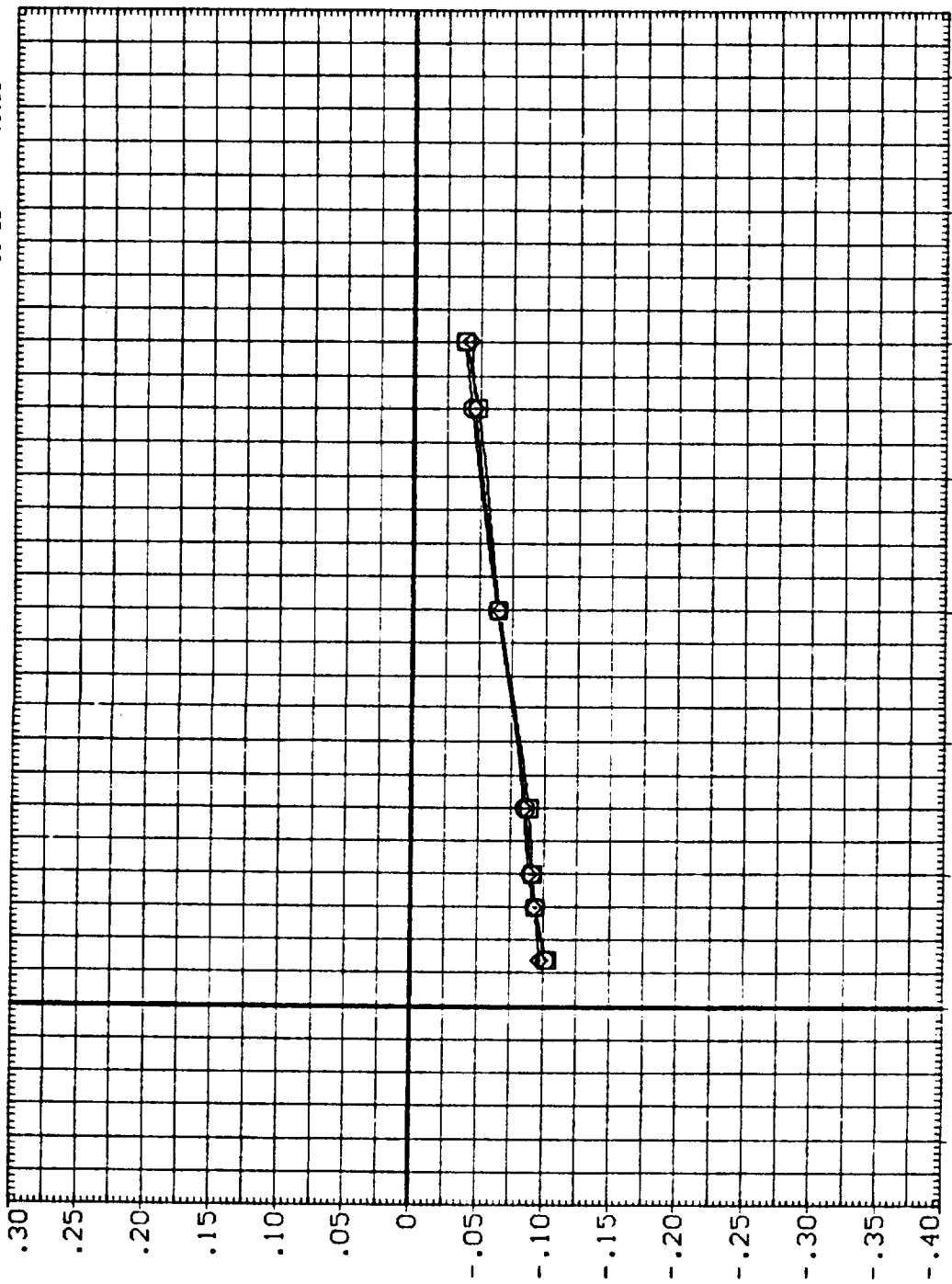


FIG. 39 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
(B) ALPHAC= 4.00

DATA SET SYMBOL  
(4NHX34)  
(4NHX28)  
(4NHX31)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)

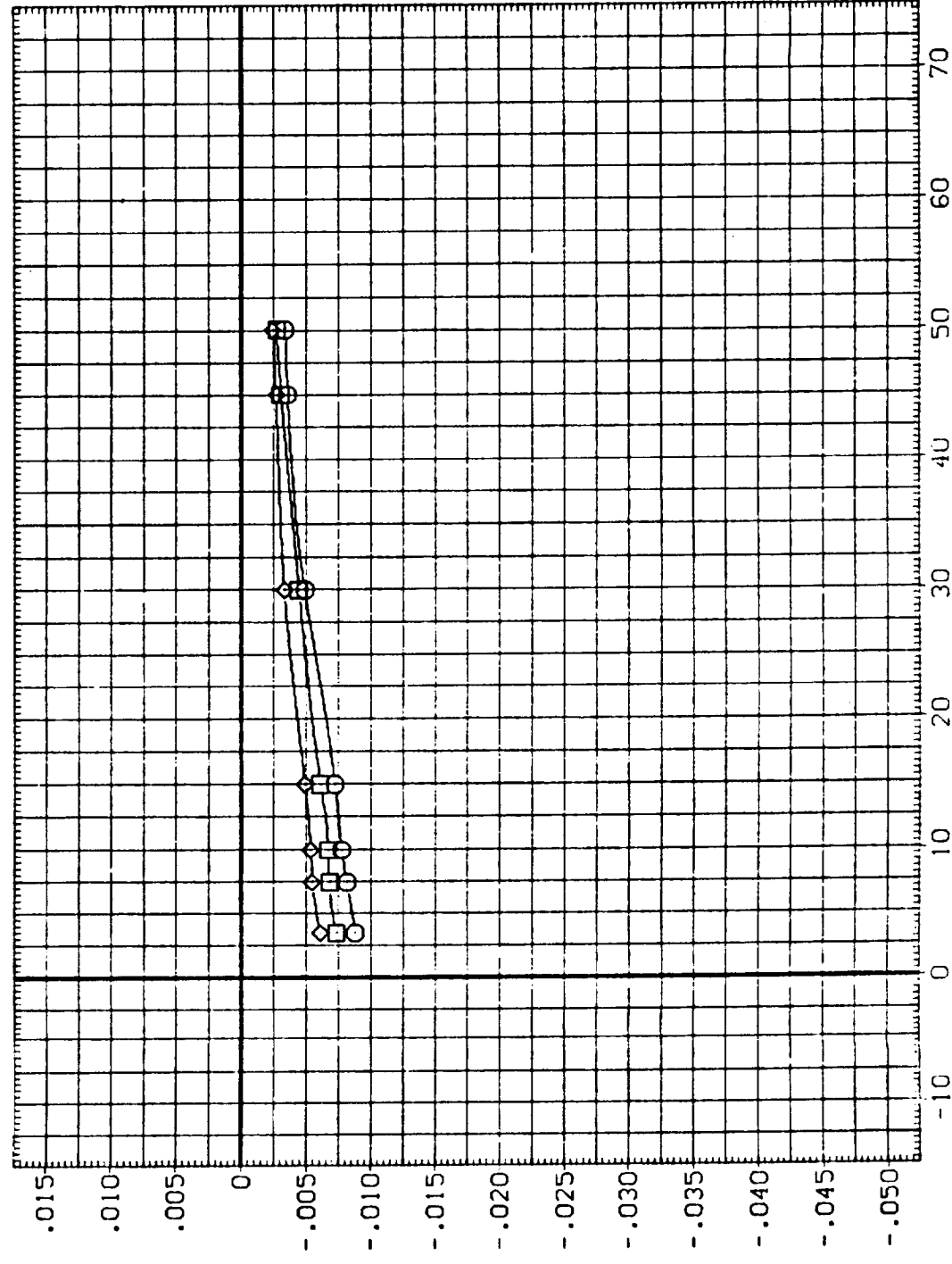
DX  
.000  
10.000  
20.000

ELEVON  
.000  
.000  
.000

IORB  
6.000  
6.000  
6.000

MACH  
.600  
.600  
.600

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125



INCREMENTAL DRAG FORCE COEFFICIENT, DCD

FIG. 39 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
(A) ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NHX34) ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
 (4NHX28) ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
 (4NHX31) ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)

DX .000  
 10.000  
 20.000  
 ELEVON .000  
 .000  
 .000  
 IORB 6.000  
 6.000  
 6.000  
 MACH .600  
 .600  
 .600  
 REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XHRP 1109.0000 IN.  
 YHRP .0000 IN.  
 ZHRP 375.0000 IN.  
 SCALE .0125

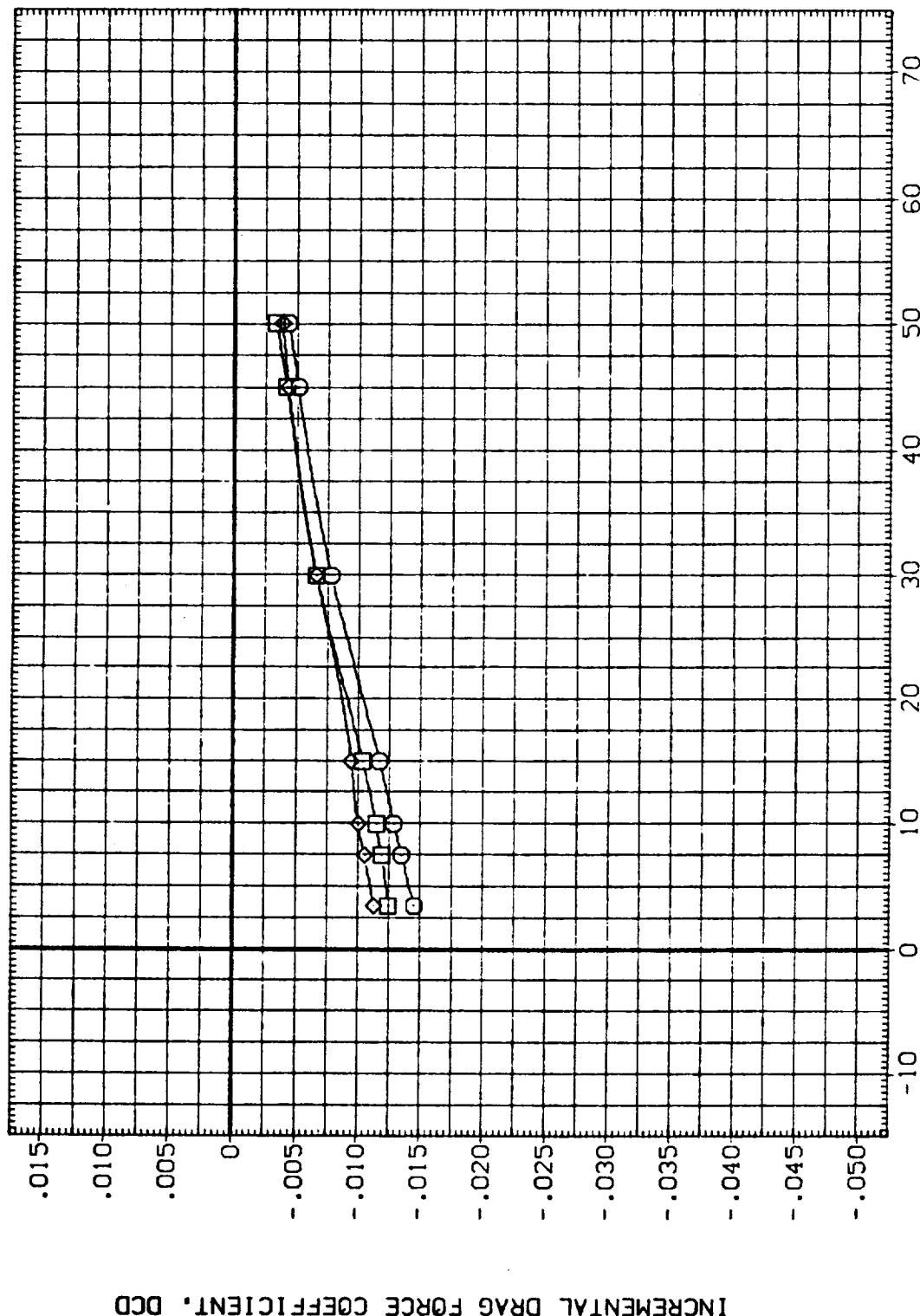


FIG. 39 EFFECT OF ORBITER DX ON ORBITER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
 (B)ALPHAC= 4.00  
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX34)	ARC 14-120(CA238) 747/1 AT1 Q351 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NHX28)	ARC 14-120(CA238) 747/1 AT1 Q351 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
(4NHX31)	ARC 14-120(CA238) 747/1 AT1 Q351 (ORBITER DATA)	20.000	.000	6.000	.600	BREF 936.6800 IN.
						XHRP 1109.0000 IN. X0
						YHRP .0000 IN. Y0
						ZHRP 375.0000 IN. Z0
						SCALE .0125

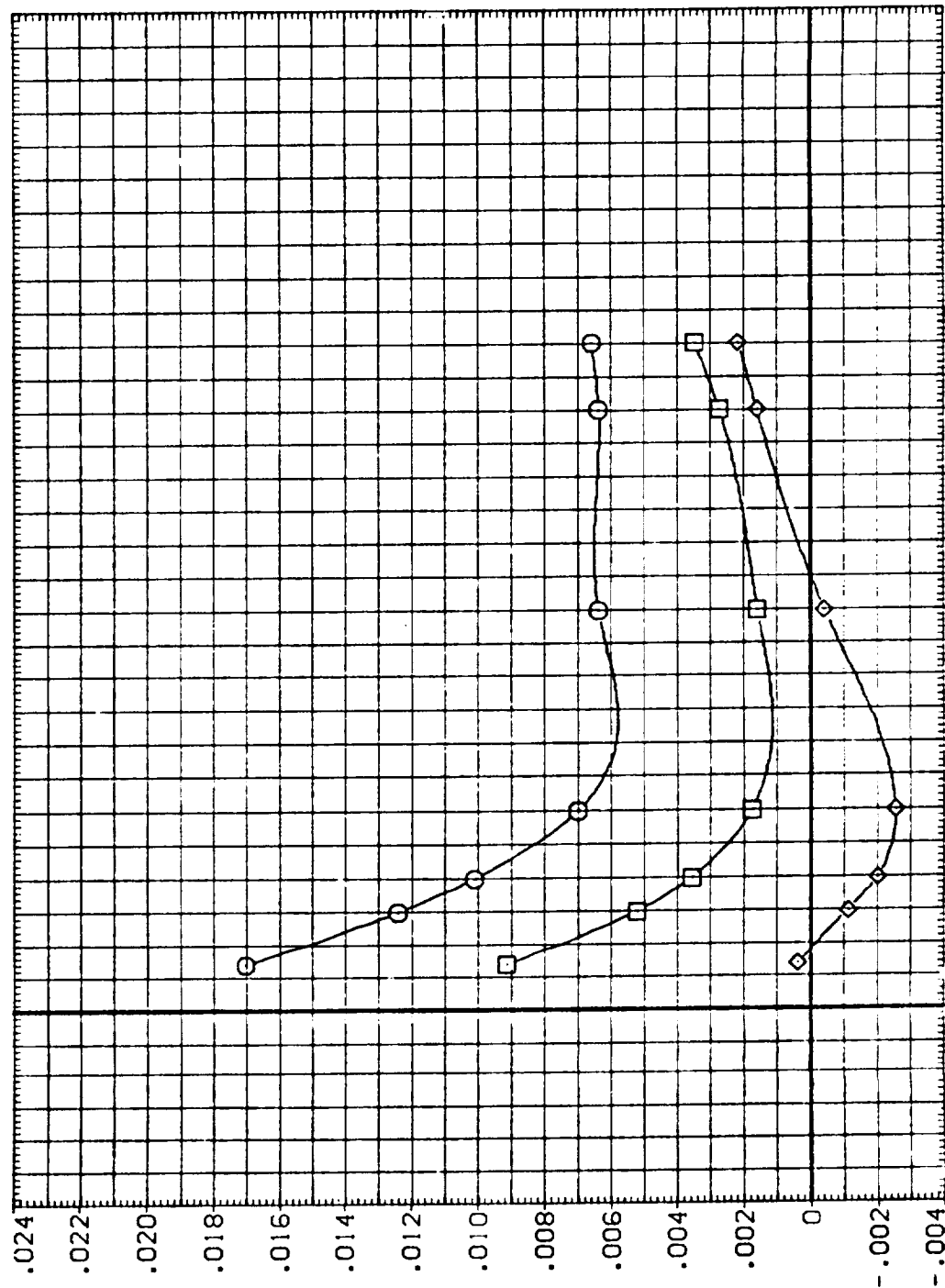


FIG. 39 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG) ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX34)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 50. FT.
(4NHX28)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
(4NHX31)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	20.000	.000	6.000	.600	BREF 936.6800 IN.
						XHRP 1109.0000 IN. X0
						YHRP .0000 IN. Y0
						ZHRP 375.0000 IN. Z0
						SCALE .0125

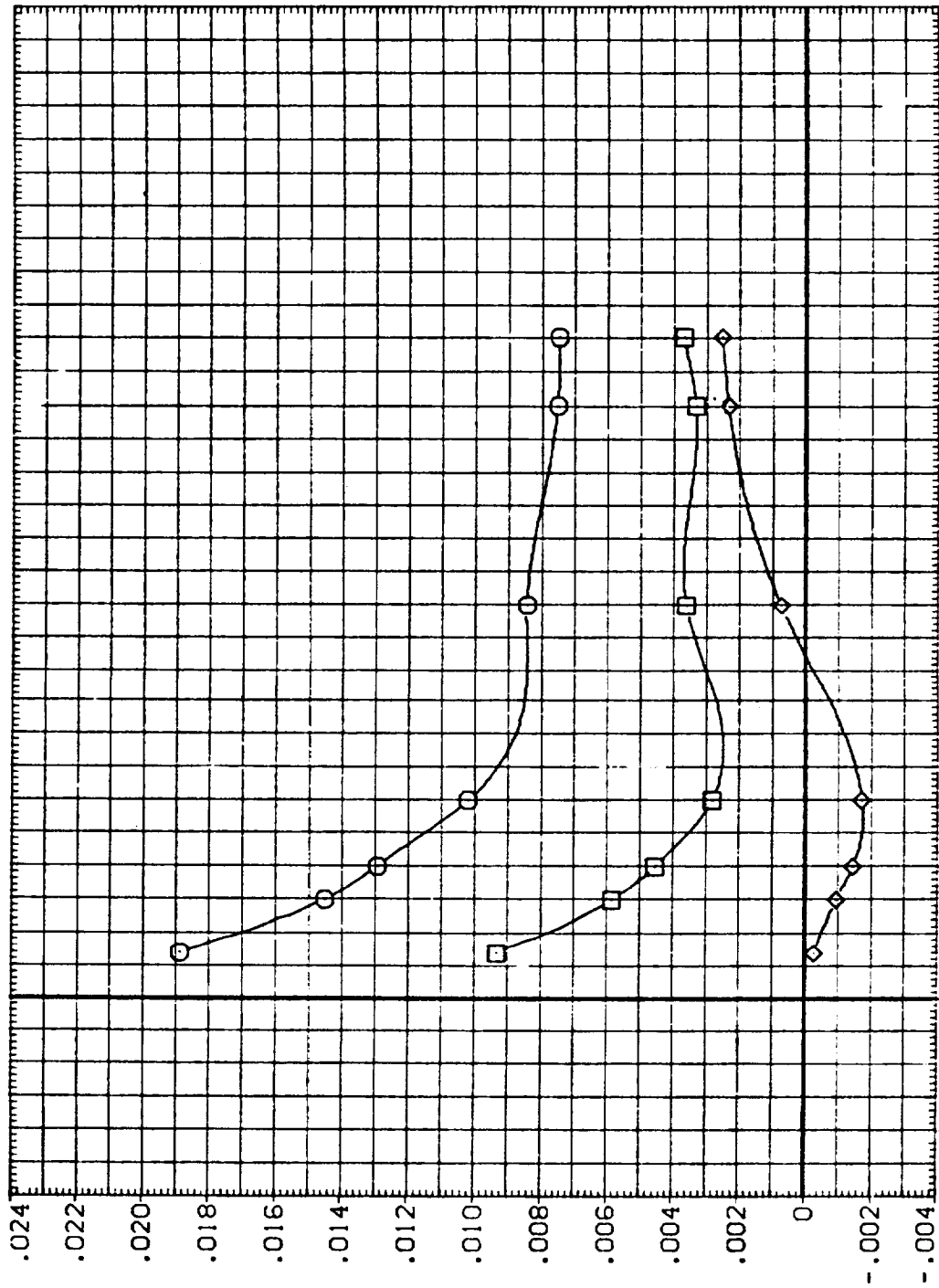


FIG. 39 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
 (B) ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX27)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 SQ.FT.
(PNHX29)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
(PNHX30)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	20.000	.000	8.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

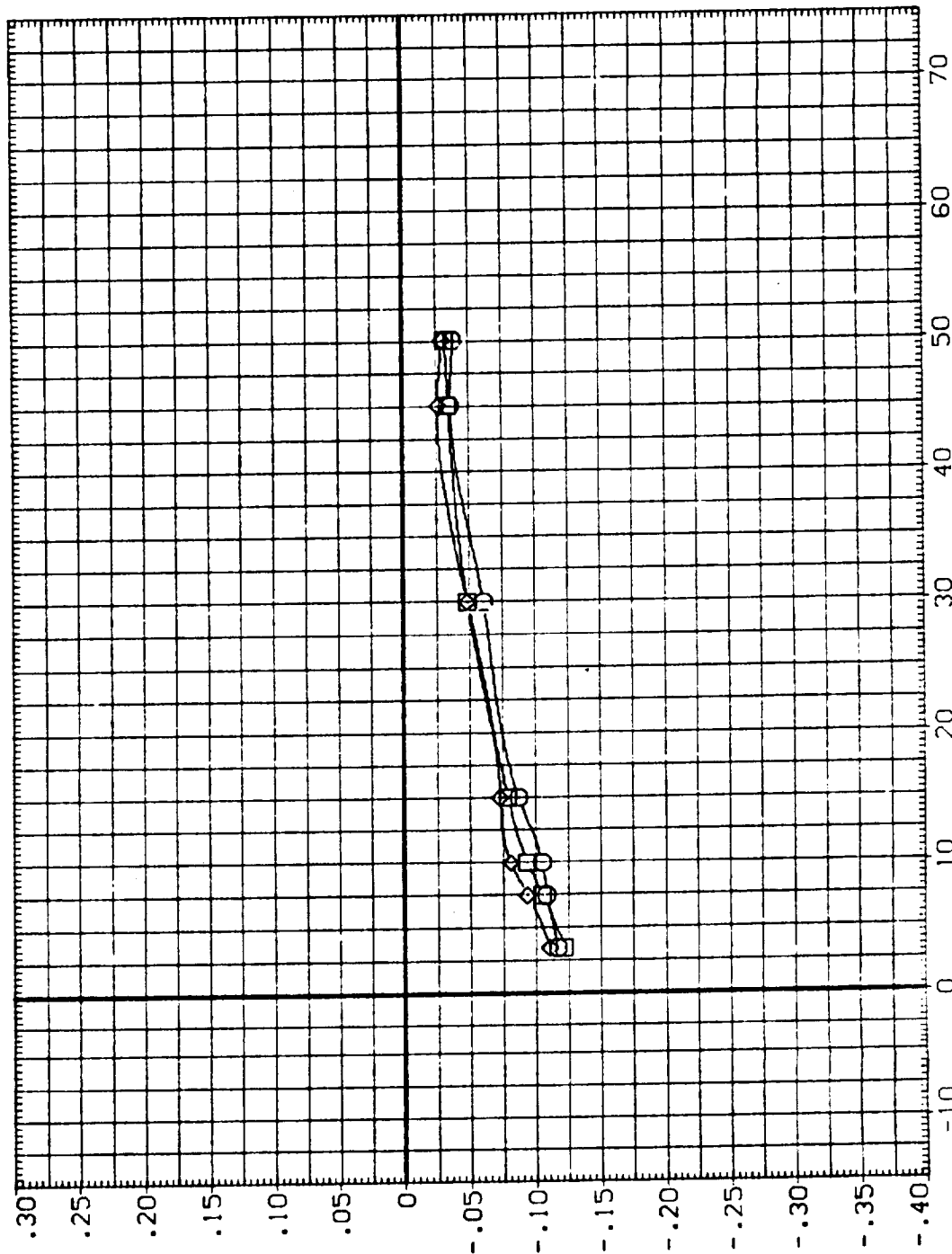


FIG. 40 EFFECT OF ORBITER DX ON CARRIER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX27)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 SQ.FT.
(PNHX29)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
(PNHX30)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	20.000	.000	8.000	.600	BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

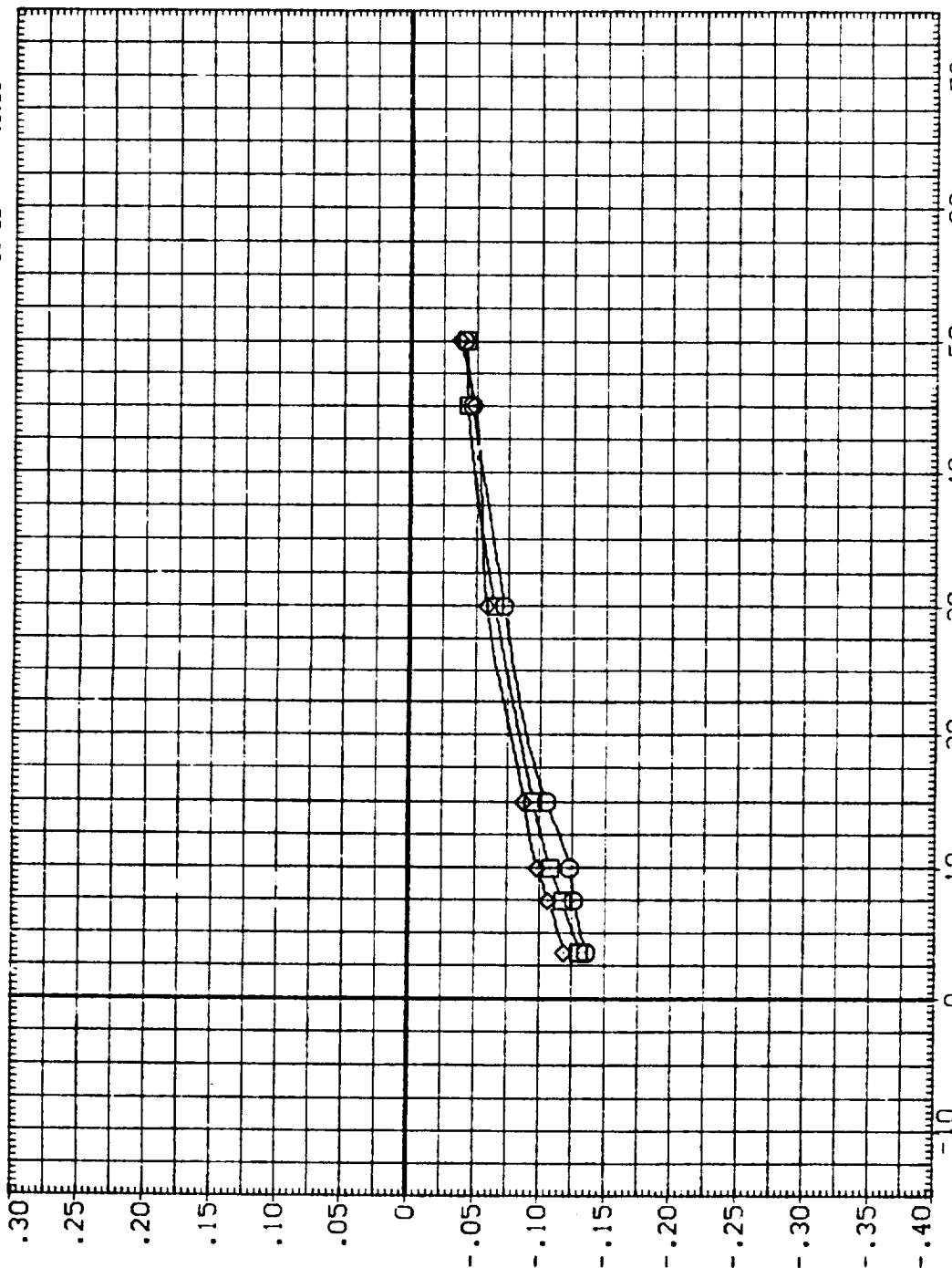


FIG. 40 EFFECT OF ORBITER DX ON CARRIER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX27)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 SQ. FT.
(PNHX29)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
(PNHX30)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	20.000	.000	8.000	.600	BREF 2346.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

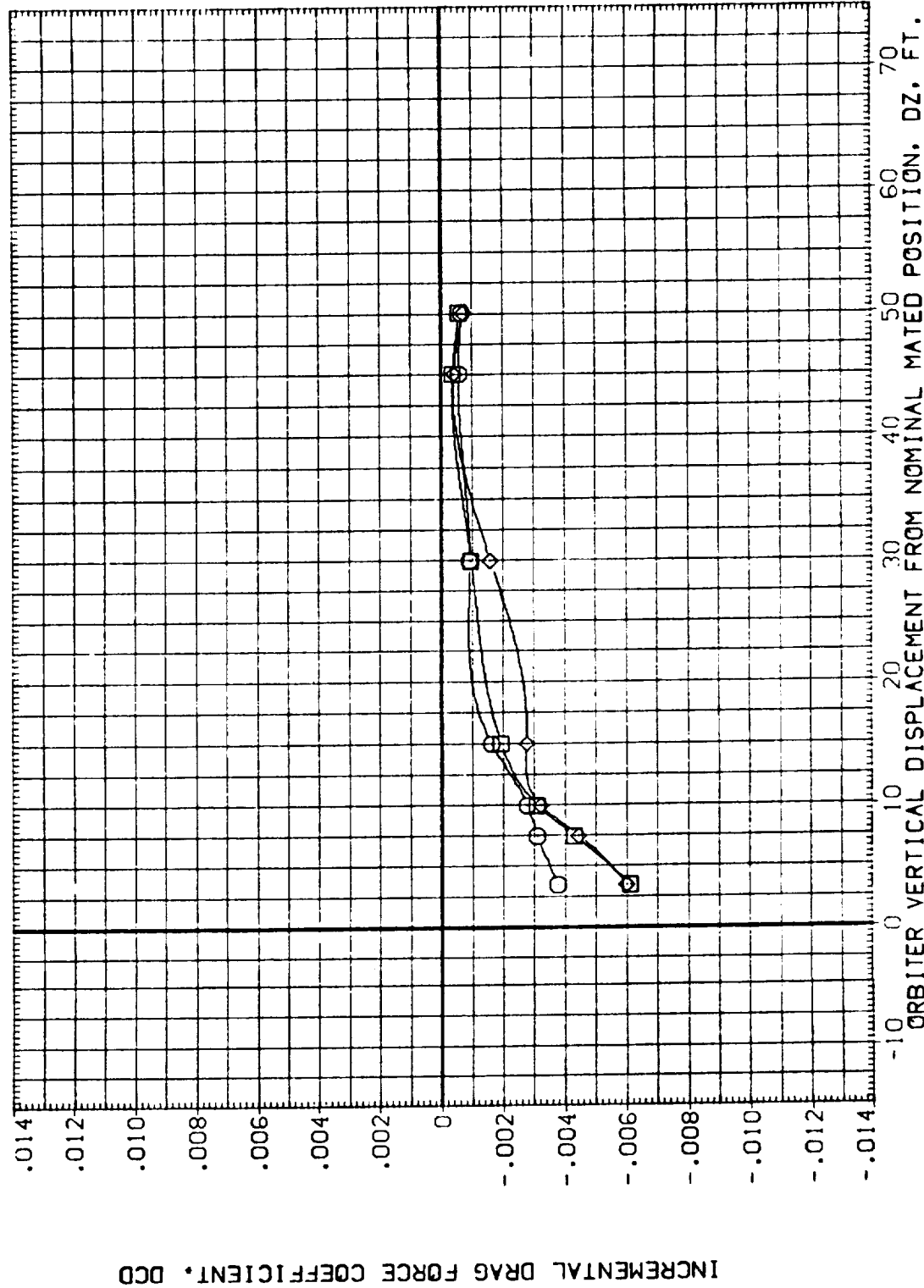


FIG. 40 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(A) ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX27)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 SQ.FT.
(PNHX28)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
(PNHX30)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (CARRIER DATA)	20.000	.000	8.000	.600	BREF 2348.0400 IN.
						YMRP 1339.9000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

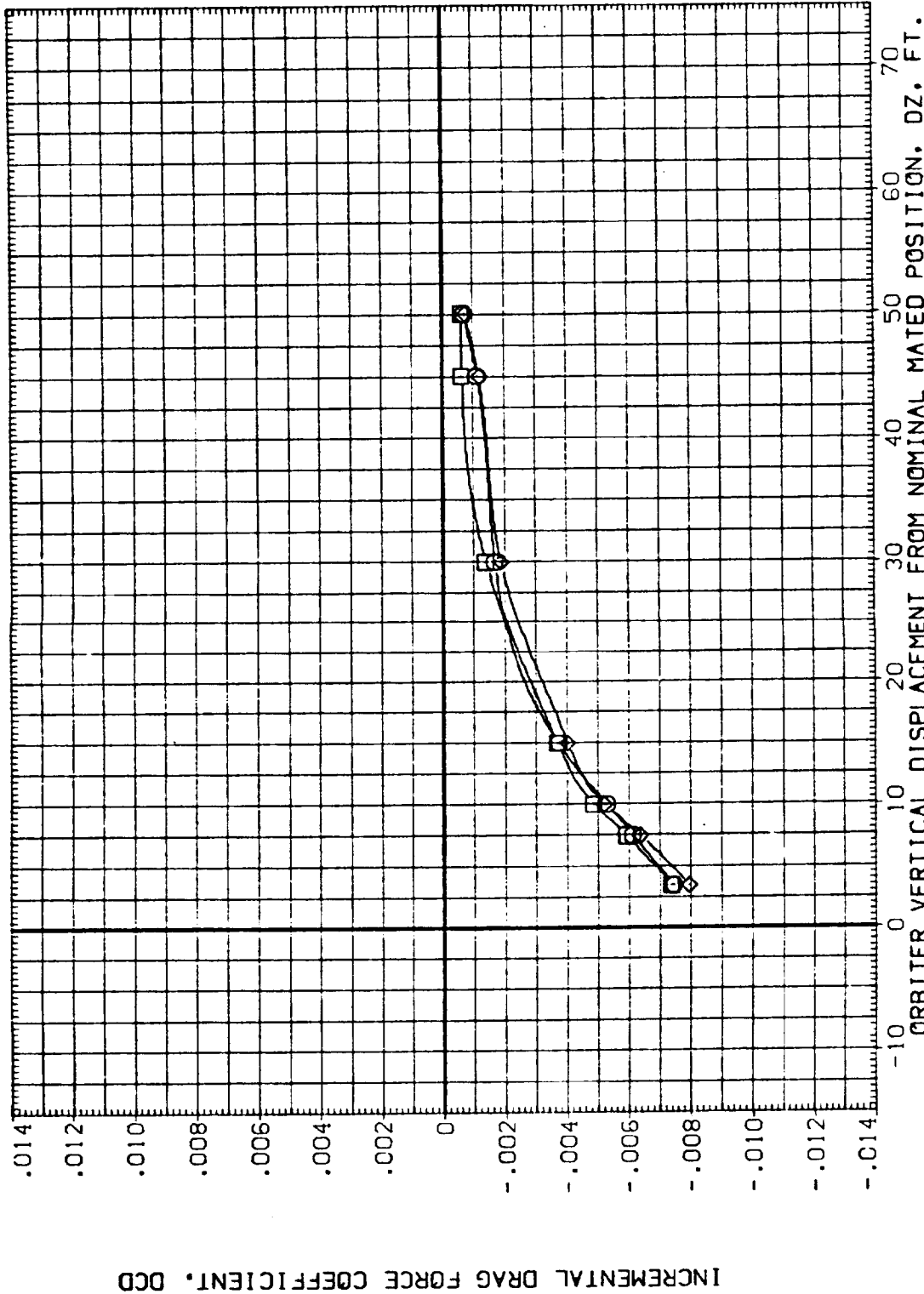


FIG. 40 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(B)ALPHAC= 4.00

REFERENCE INFORMATION	
SREF	3500.0000 SO.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN.
XMRP	1339.9000 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE .0125	

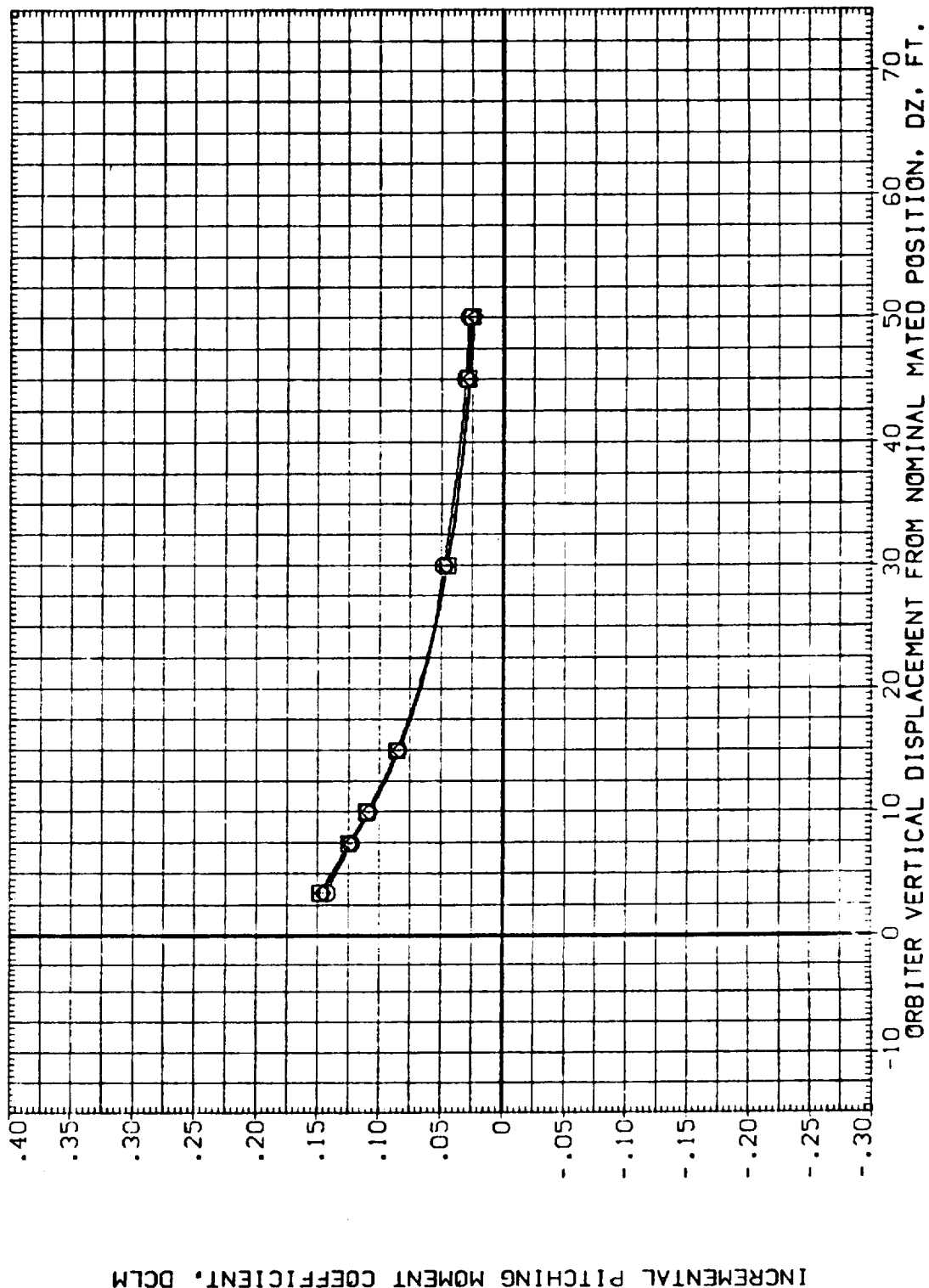


FIG. 40 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 8.0 DEG)  
 (A)ALPHAC= 2.00 PAGE 317

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHX27)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 SQ.FT.
(PNHX29)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
(PNHX30)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	20.000	.000	8.000	.600	BREF 2348.0400 IN.
						XMRP 1339.8000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

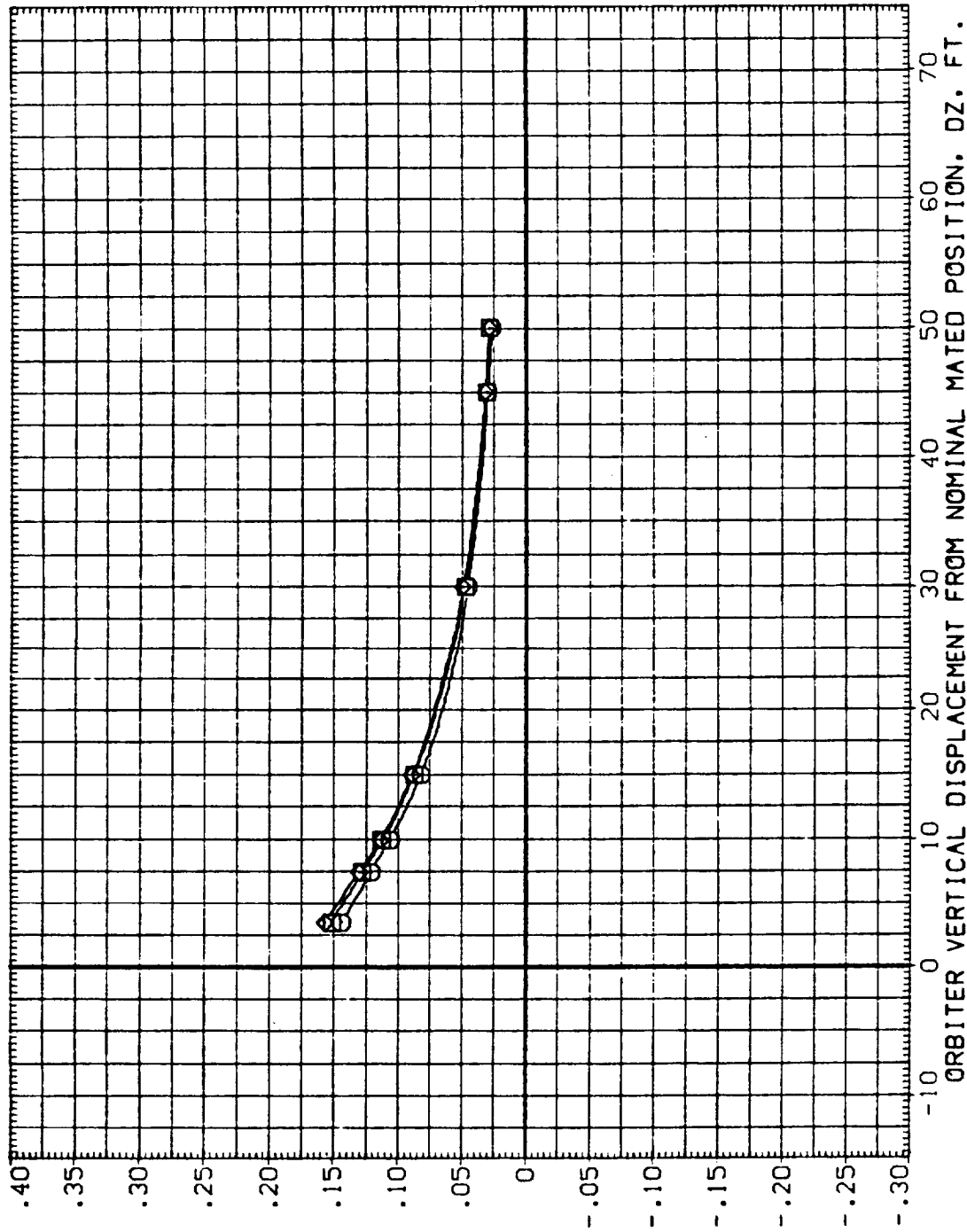


FIG. 40 EFFECT OF ORBITER DX ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX27)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITTER DATA)	.000	.000	8.000	.600	SREF 2690.0000 SQ.FT.
(4NHX29)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITTER DATA)	10.000	.000	8.000	.600	LREF 474.8100 IN.
(4NHX30)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITTER DATA)	20.000	.000	8.000	.600	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

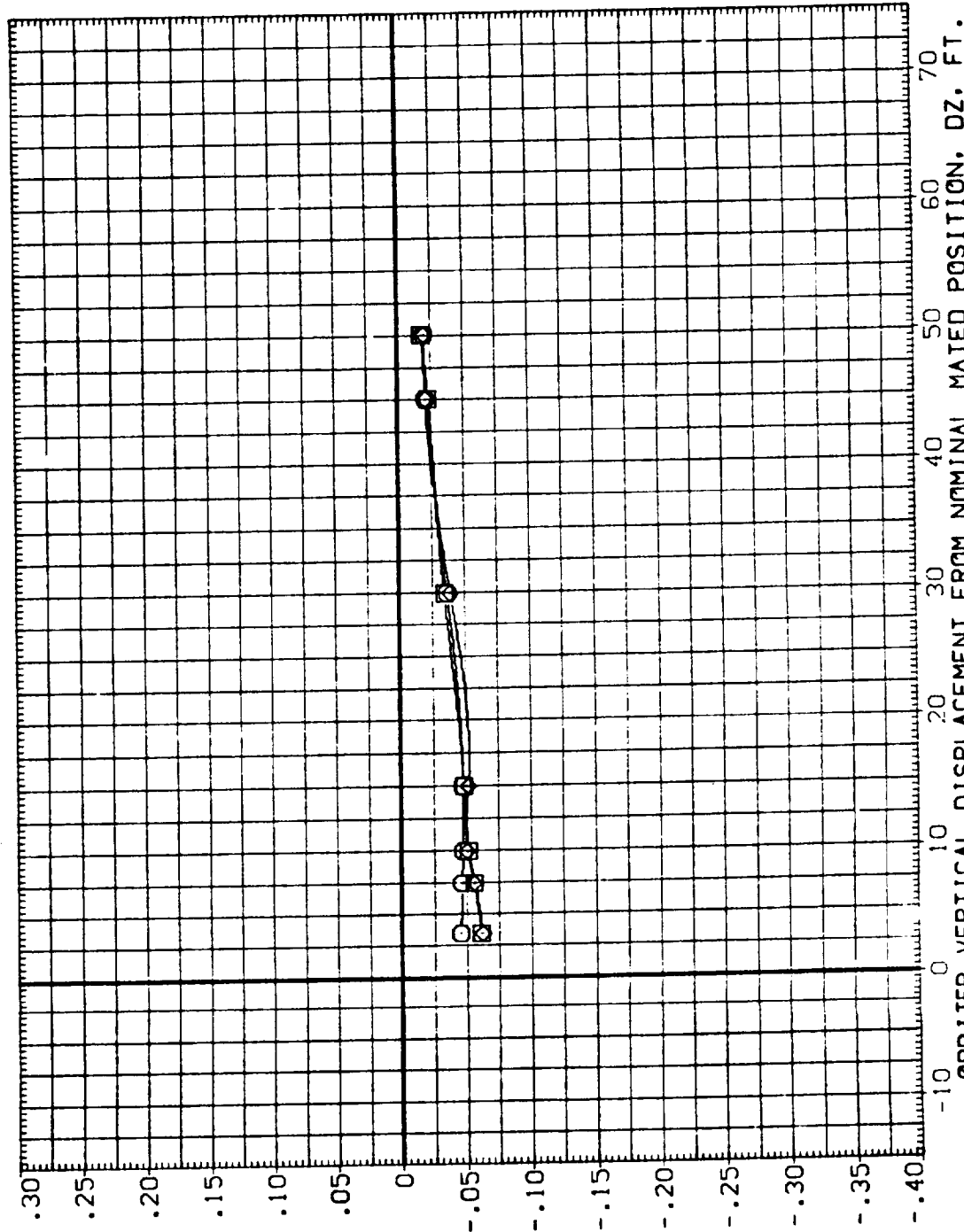


FIG. 41 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(A) ALPHA= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX27)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	.000	.000	8.000	.600	SREF 2690.0000 SQ.FT.
(4NHX29)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	10.000	.000	8.000	.600	LREF 474.8100 IN.
(4NHX30)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	20.000	.000	8.000	.600	BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

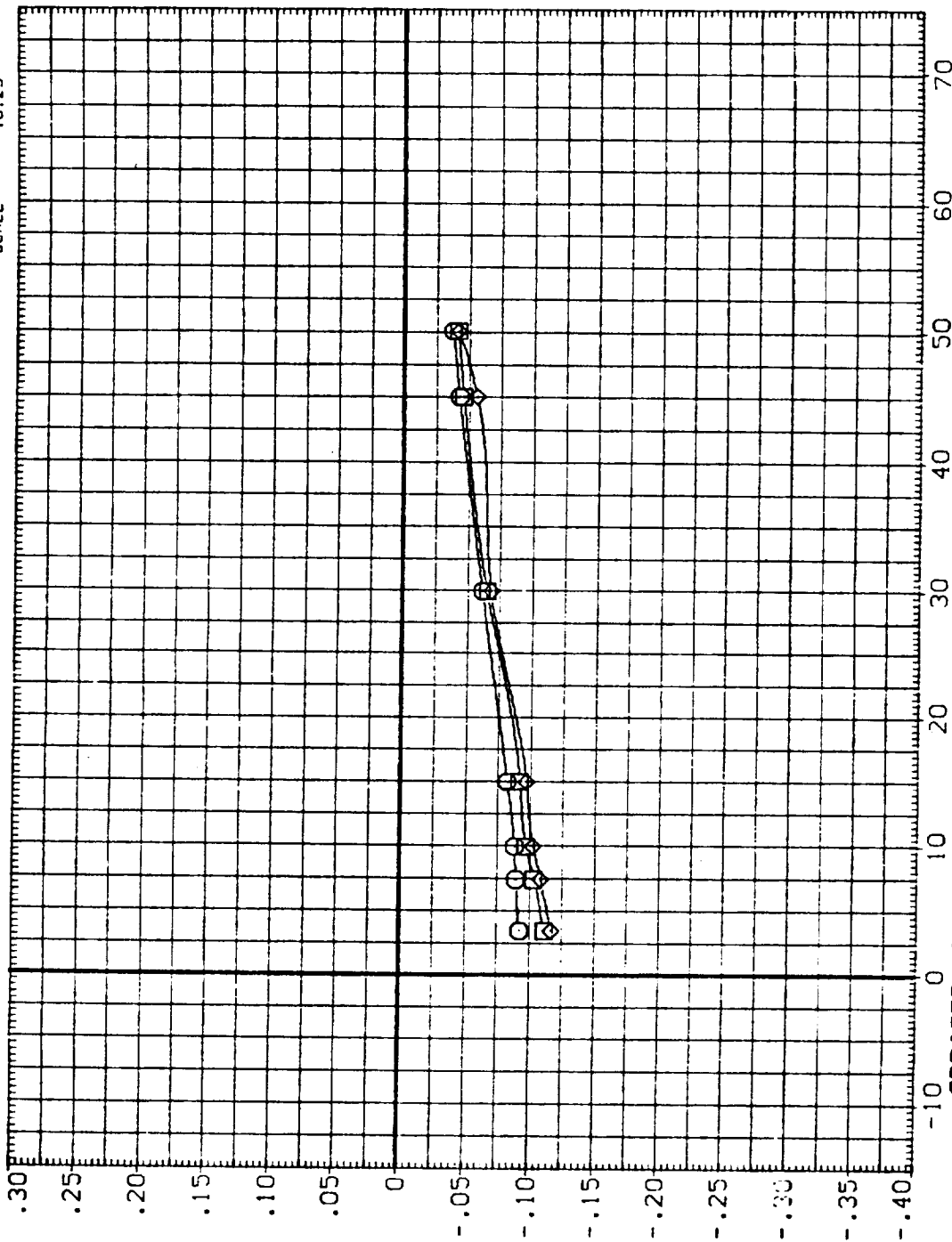


FIG. 41 EFFECT OF ORBITER DX ON ORBITER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX27)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	.000	.000	8.000	.600	SREF 2690.0000 SO.FT.
(4NHX29)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	10.000	.000	8.000	.600	LREF 474.8100 IN.
(4NHX30)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	20.000	.000	8.000	.600	BREF 936.6800 IN.
						XMRP 1109.6800 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

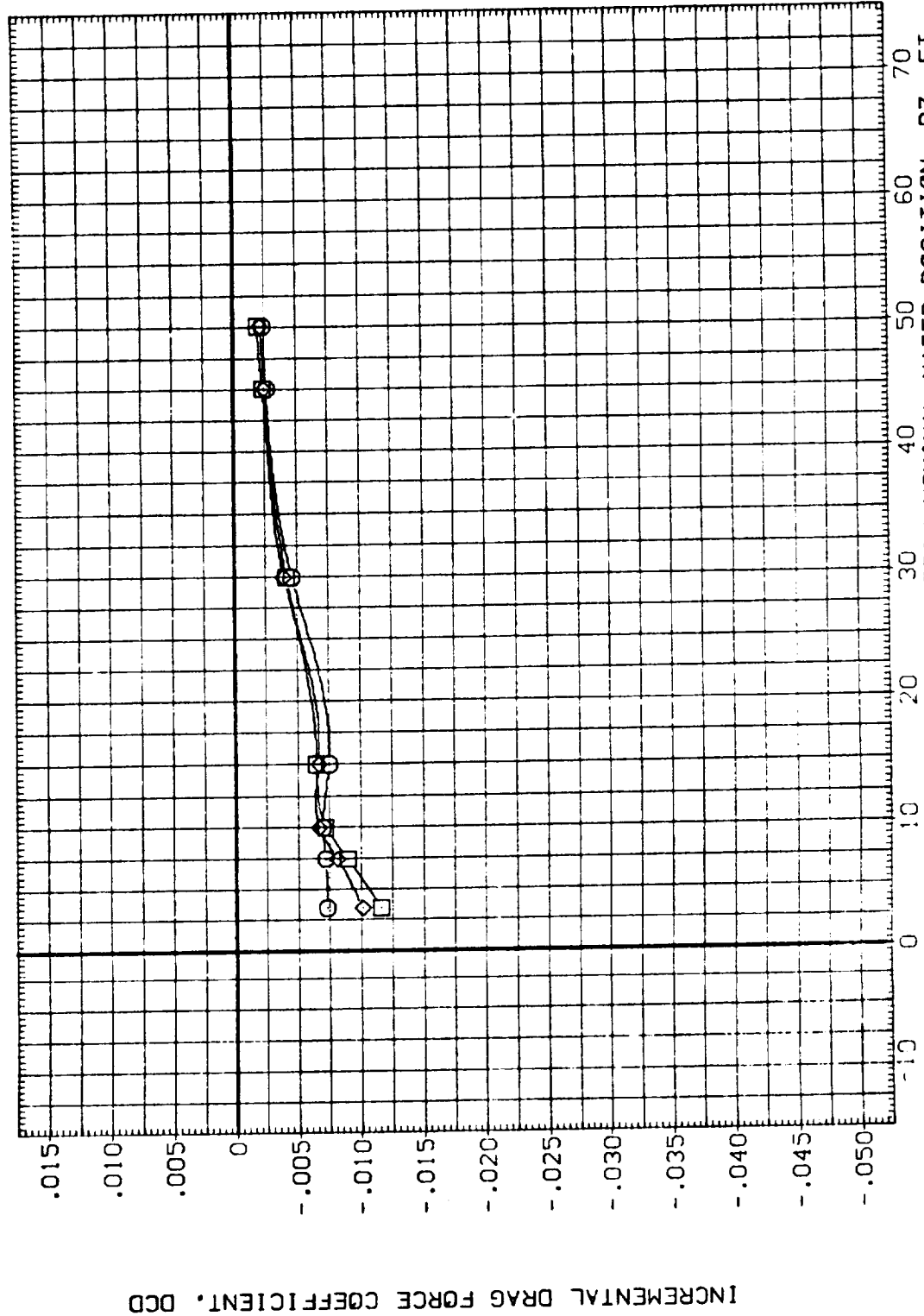


FIG. 41 EFFECT OF ORBITER DX ON ORBITER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NHX27)  
(4NHX29)  
(4NHX30)

ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)

DX .000  
10.000  
20.000

ELEVON .000  
.000  
.000

1088 8.000  
8.000  
8.000

MACH .600  
.600  
.600

REFERENCE INFORMATION

SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

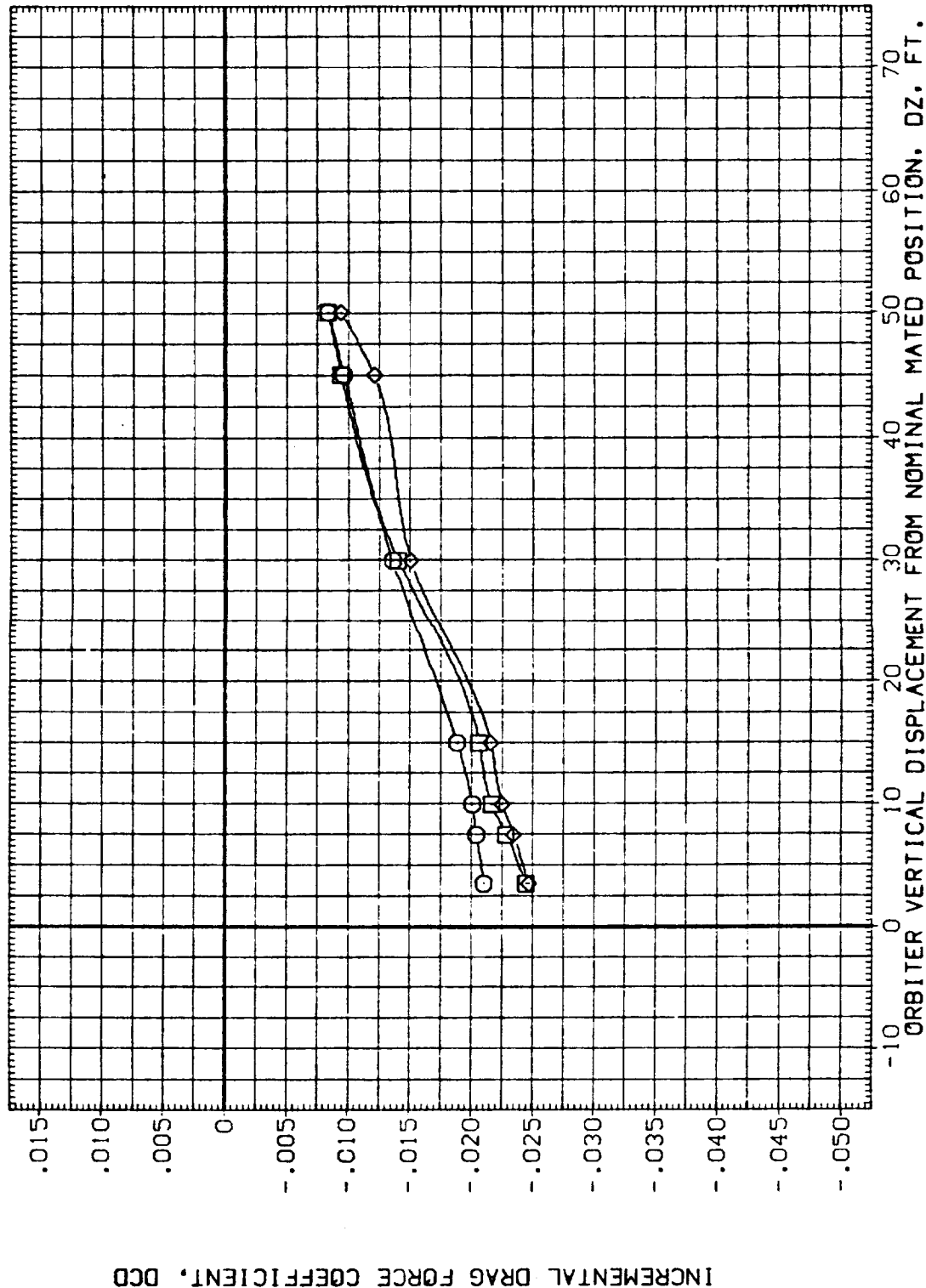


FIG. 41 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, ORB= 8.0 DEG)  
(B)ALPHAC= 4.00 PAGE 322

REPRODUCIBILITY OF THE  
ORIGINAL FAC. 100%

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DX	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHX27)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	.000	.000	8.000	.500	SREF 2690.0000 SQ.FT.
(4NHX28)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	10.000	.000	8.000	.500	LREF 474.8100 IN.
(4NHX30)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	20.000	.000	8.000	.600	BREF 936.6800 IN. X0
						XMRP 1109.0000 IN. Y0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Y0
						SCALE .0125

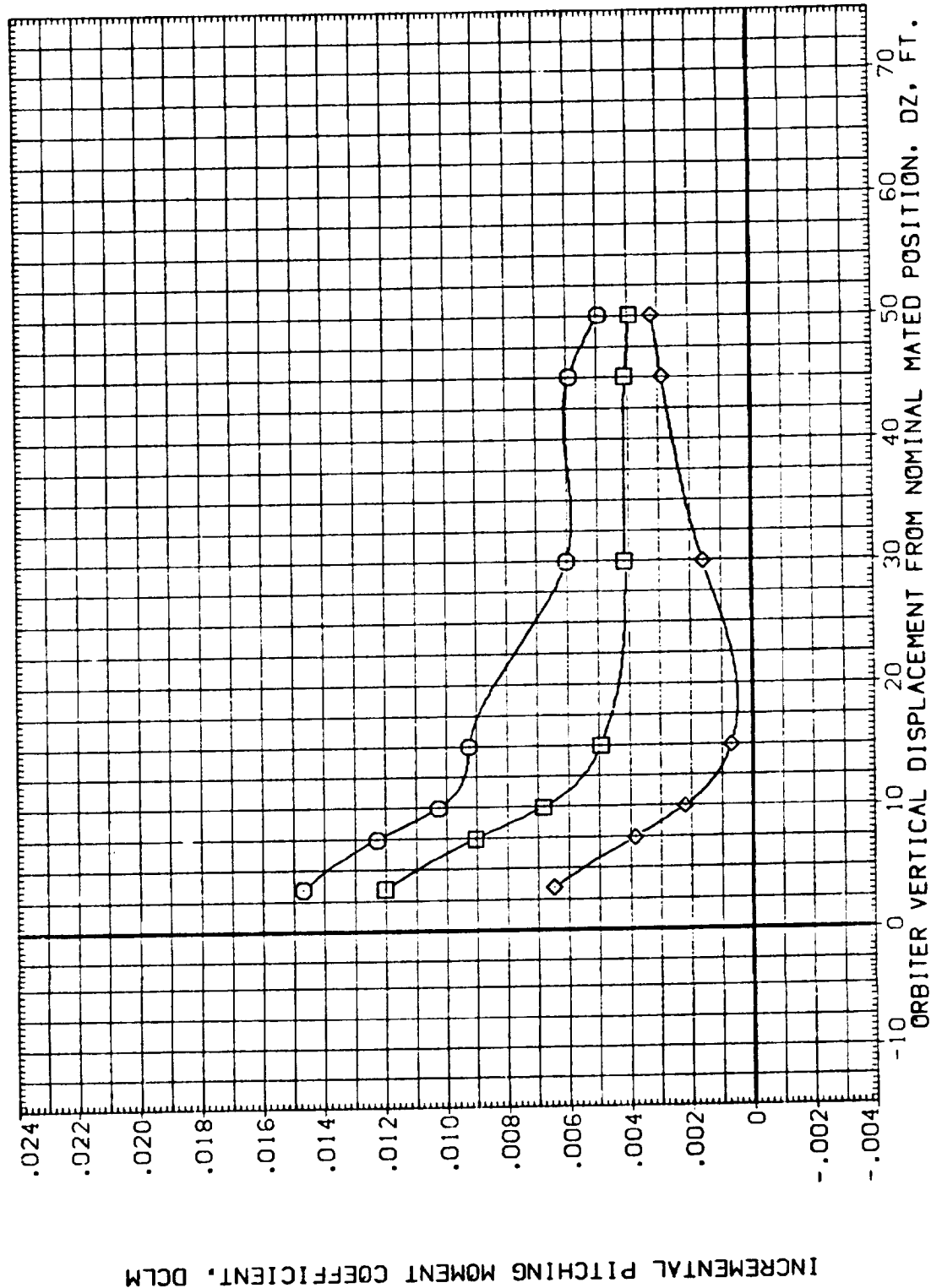


FIG. 41 EFFECT OF ORBITER DX ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(A)ALPHAC= 2.00

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL

CONFIGURATION DESCRIPTION

DX

ELEVON

MACH

REFERENCE INFORMATION

SREF 2690.0000 50. FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

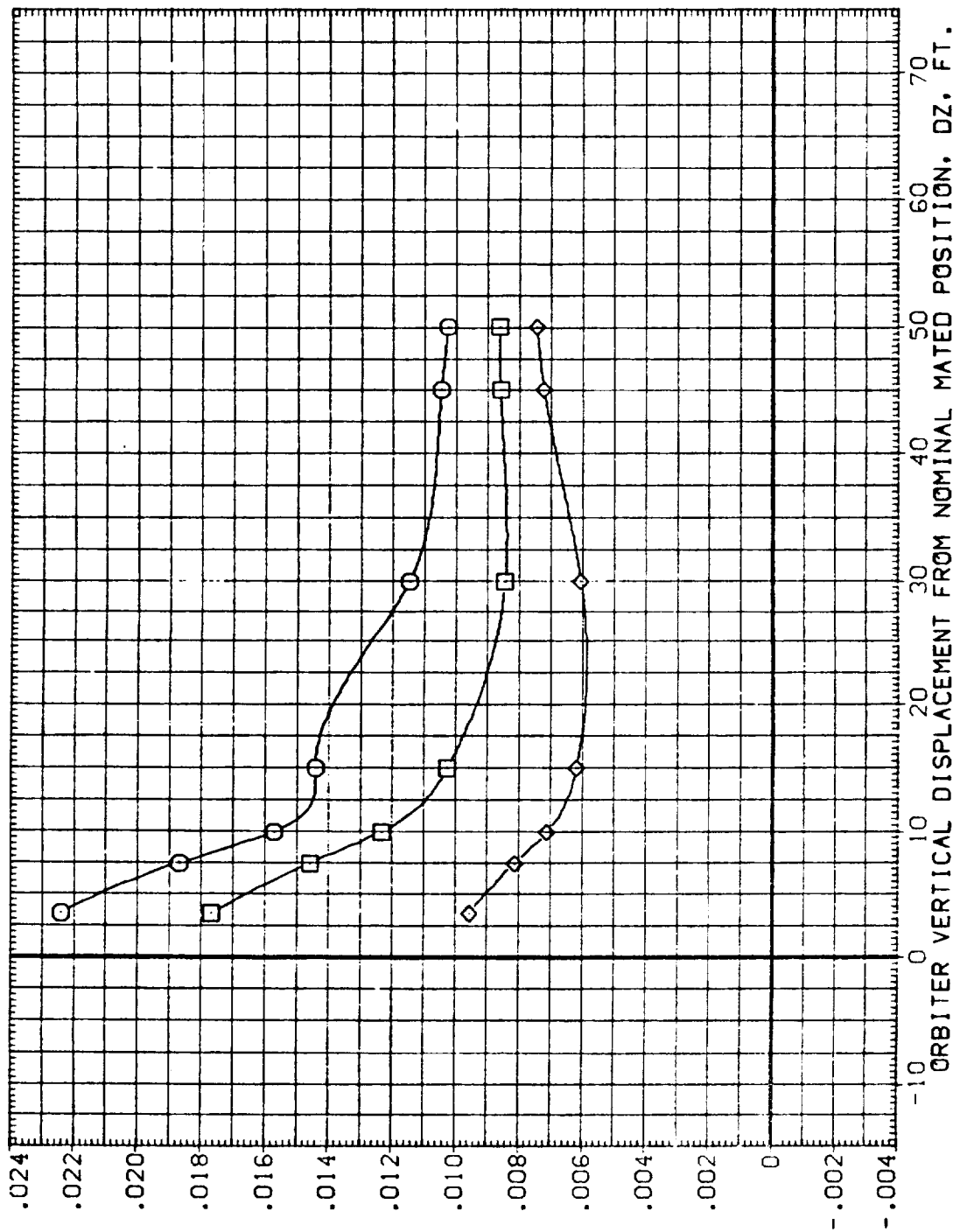


FIG. 41 EFFECT OF ORBITER DX ON ORBITER(STAB= 5.0 DEG.,ORB T/C ON,IOB= 8.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(UNHY34)	ARC 14-120(CA238)	747/1 AT1	03S1 (CARRIER DATA)	.000	.500	SREF 5500.0000 SO.FT.
(UNHY32)	ARC 14-120(CA238)	747/1 AT1	03S1 (CARRIER DATA)	.000	.500	LREF 327.7800 IN.
						BREF 2348.0400 IN. XC
						XMRP 1339.9000 IN. YC
						ZMRP .0000 IN. ZC
						SCALE .0125

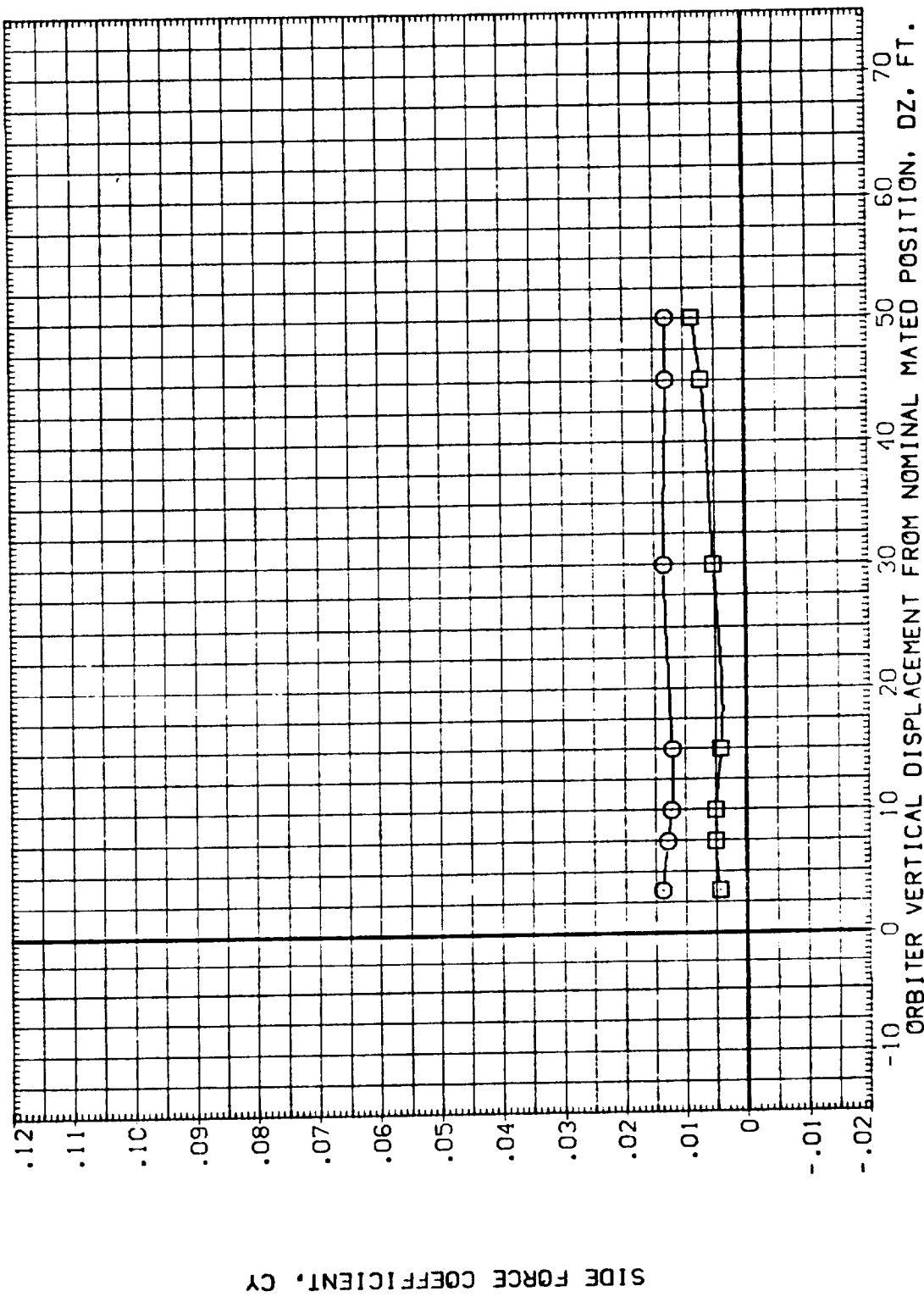


FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 6.0 DEG)  
 (A)ALPHAC= 2.00

DATA SET SYMBOL (UNHY34) (UNHY32) CONFIGURATION DESCRIPTION ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA) 747/1 AT1 03S1 (CARRIER DATA) DY .000 10.000 ELEVON 10RB 6.000 6.000 MACH .600 .600 REFERENCE INFORMATION SREF 5500.0000 SQ.FT. LREF 327.7800 IN. BRREF 2348.0400 IN. XMRP 1339.9000 IN. YMRP .0000 IN. ZMRP 190.7500 IN. SCALE .0125

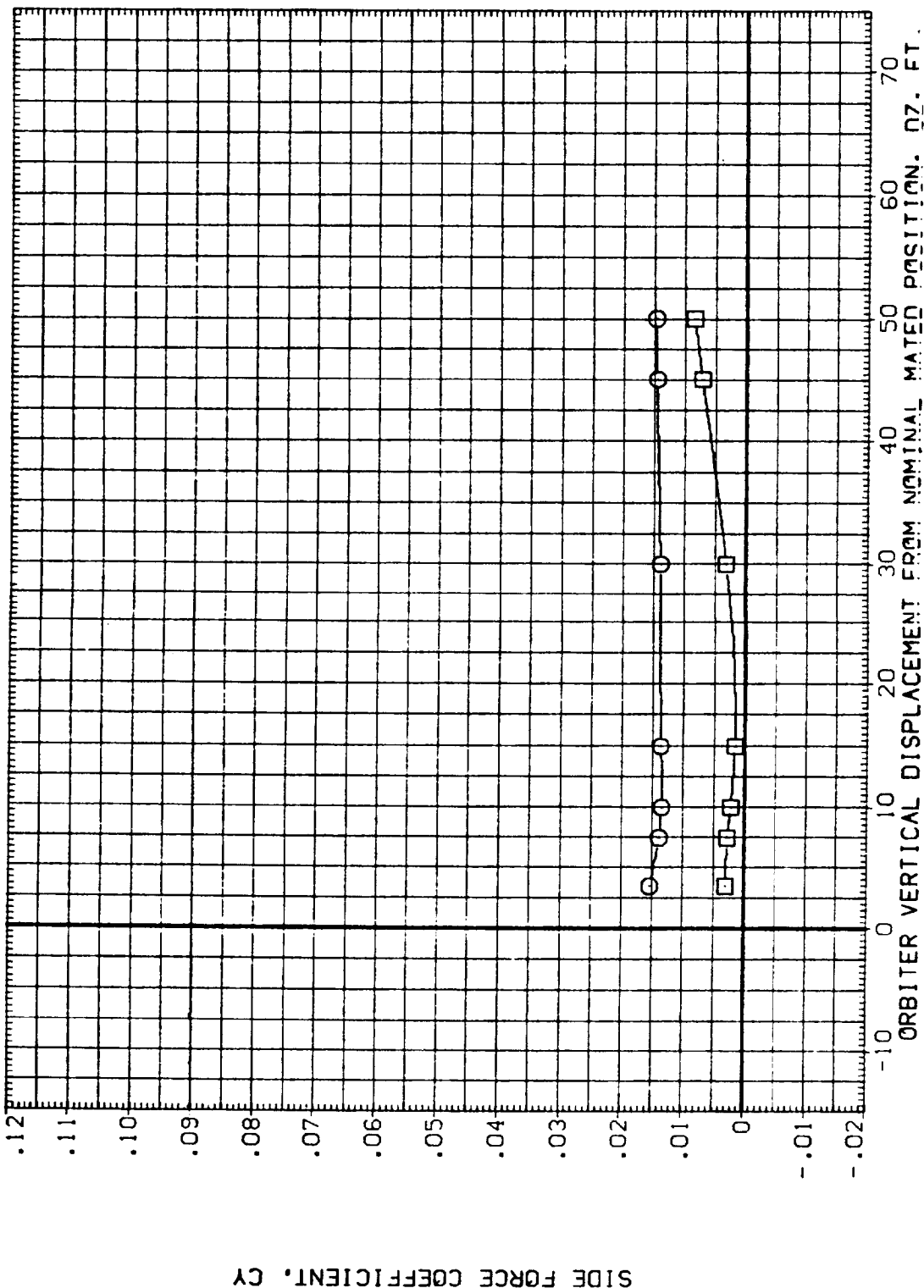


FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C ON,10RB= 6.0 DEG)  
(B)ALPHAC= 4.00 PAGE 326

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR



REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN.
XMRP	1339.9000 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN ZC
SCALE	.0125

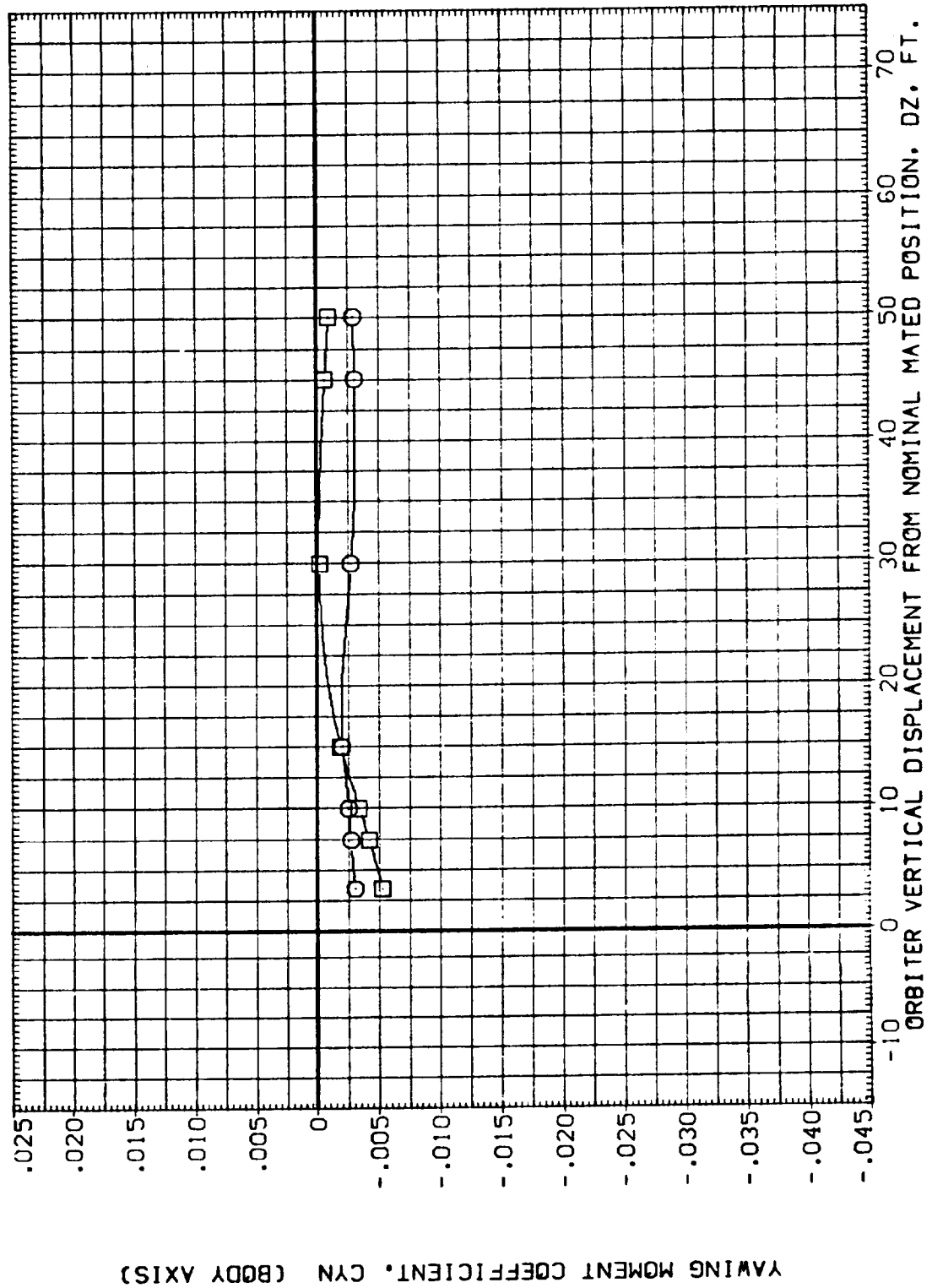


FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 6.0 DEG)  
(A)ALPHAC= 2.00 PAGE 327

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (UNHY34) ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
 (UNHY32) ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

BY ELEVON 10RB MACH REFERENCE INFORMATION  
 .000 .000 .500 SREF 5500.0000 50.FT.  
 10.000 .000 .600 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.5000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

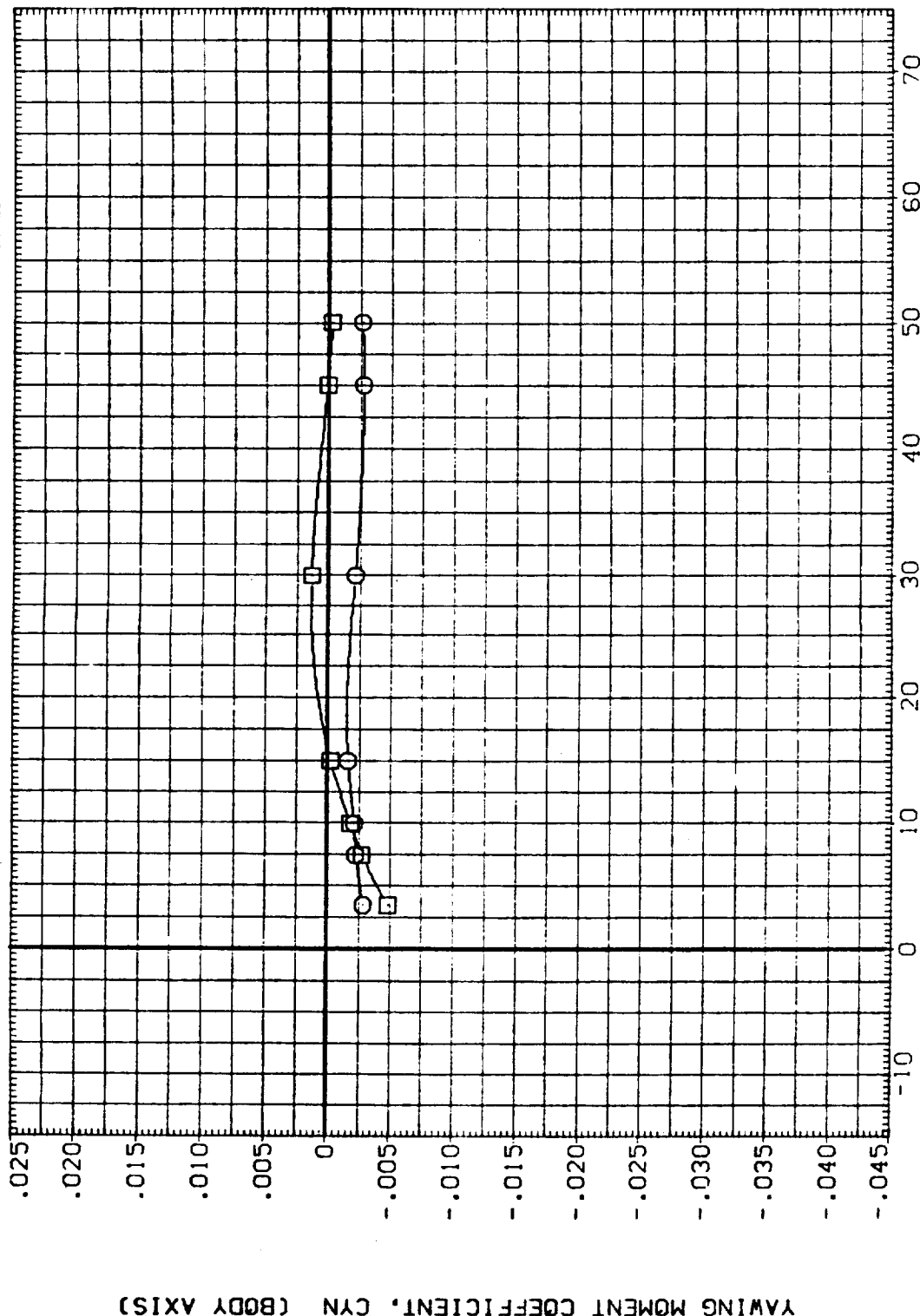


FIG. 42 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C ON, 10RB= 6.0 DEG)  
 (B)ALPHAC= 4.00 PAGE 328

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(UNHY34)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 SQ.FT.
(UNHY32)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						YMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

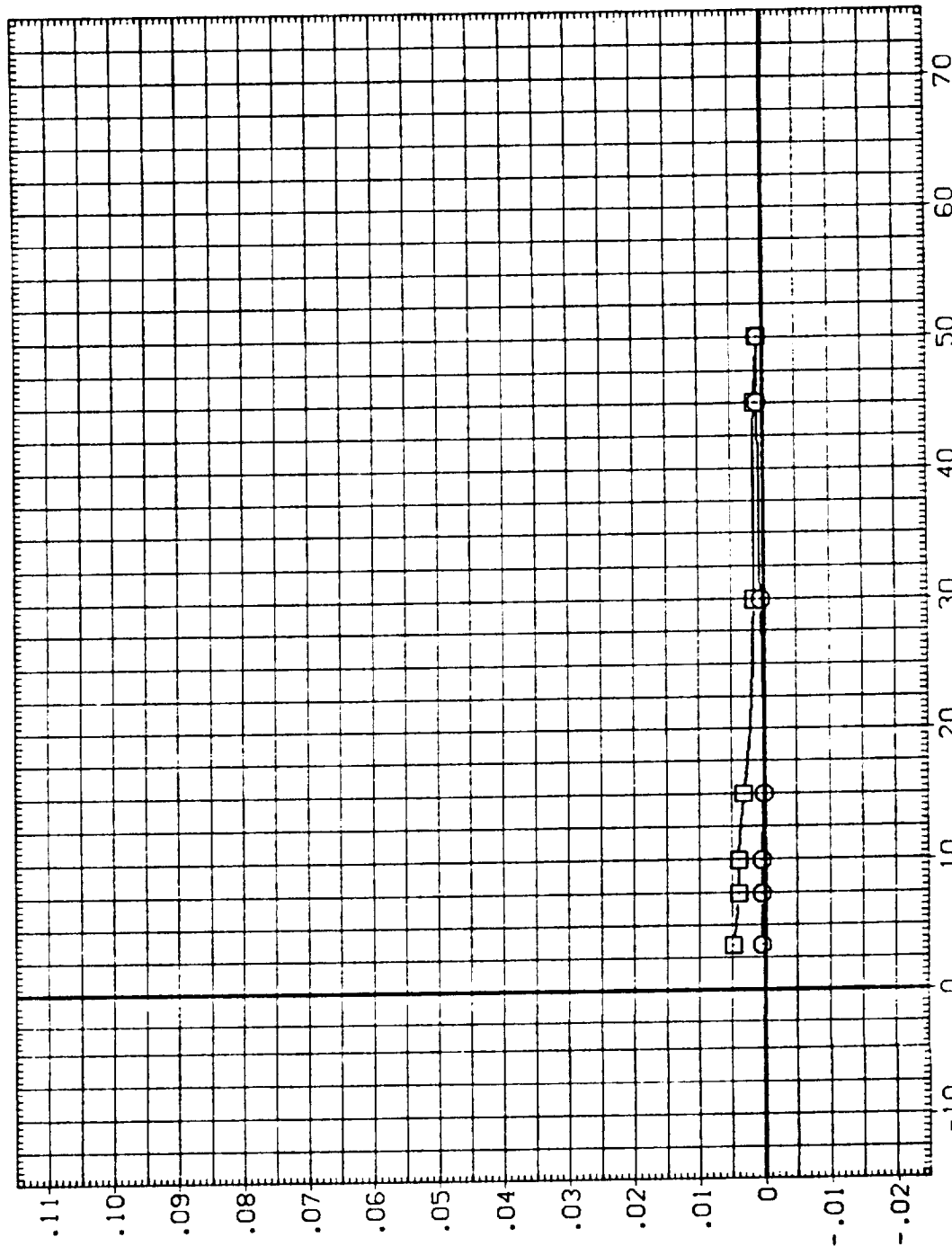


FIG. 42 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
 (A)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(UNHY34) 8 ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
(UNHY32) ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.2800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

DY ELEVON IORB MACH  
.000 .000 6.000 .600  
10.000 .000 6.000 .600

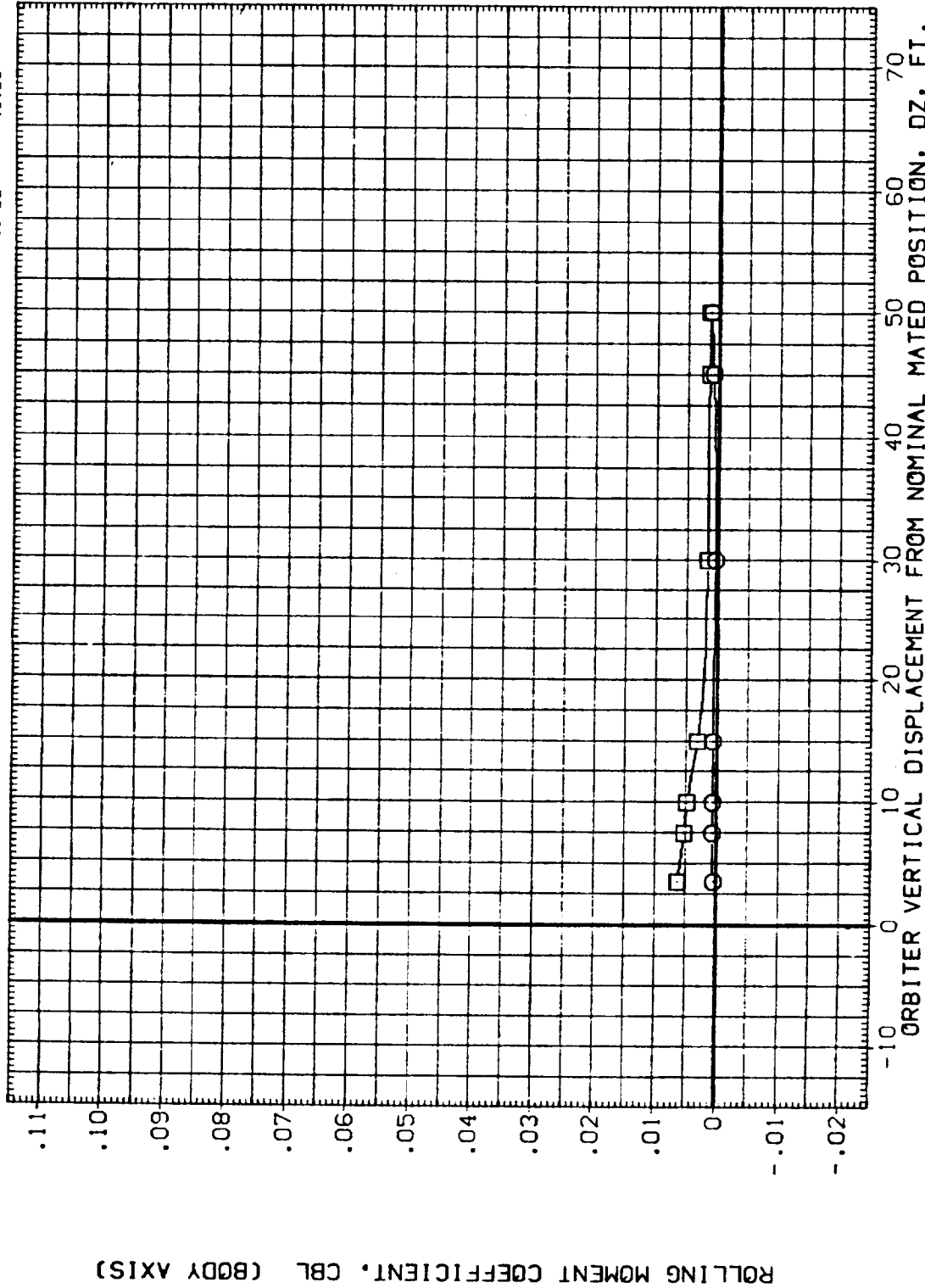


FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
(B)ALPHAC= 4.00 PAGE 330

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNH34)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 50.FT.
(PNH32)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

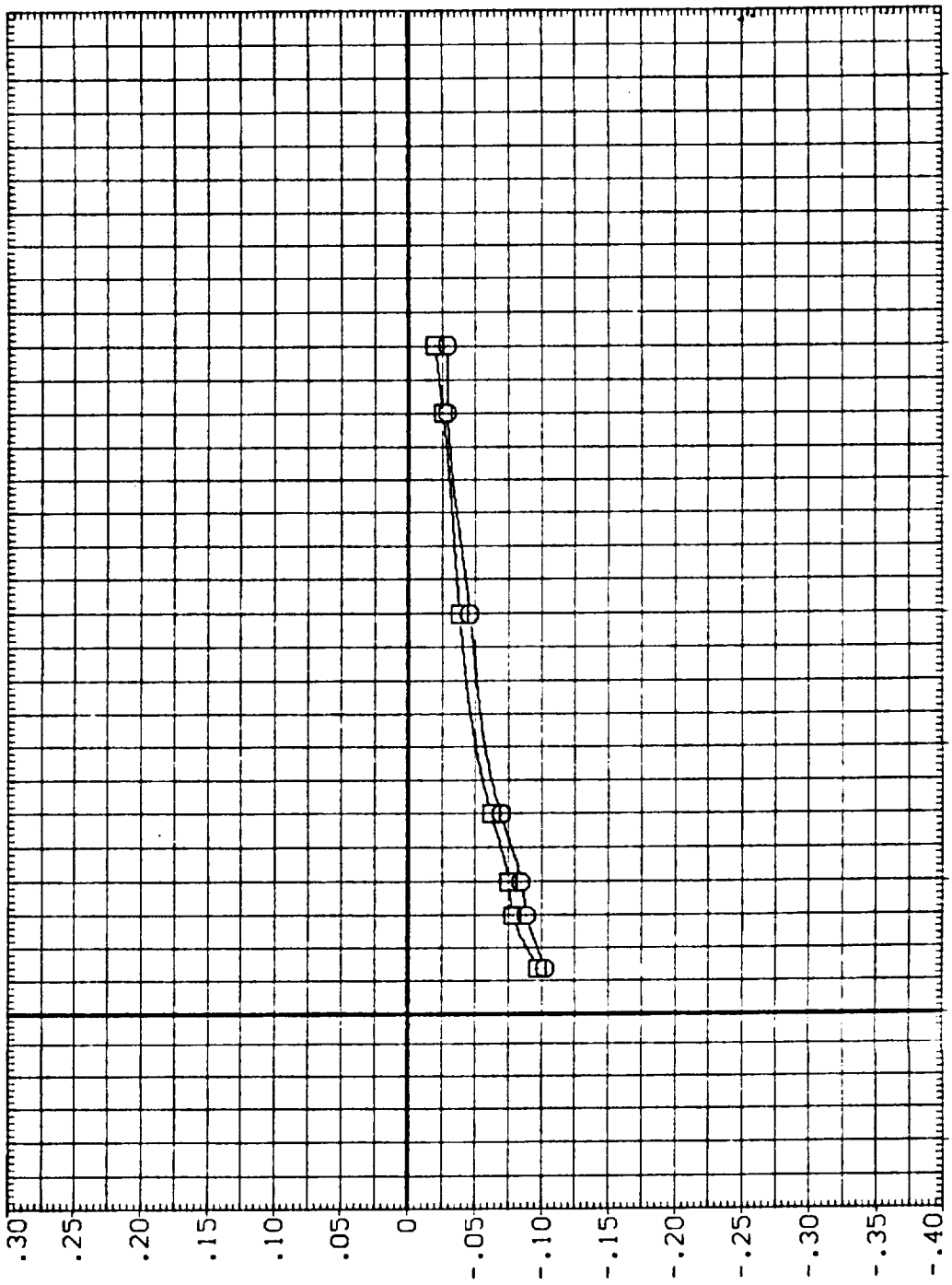


FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
 (A) ALPHA= 2.00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
(PNHY34)    ARC 14-120(CA238) 747/1 AT1 03SI (CARRIER DATA)  
(PNHY32)    ARC 14-120(CA238) 747/1 AT1 03SI (CARRIER DATA)

BY    ELEVON    IORB    MACH  
10.000    .000    6.000    .600

REFERENCE INFORMATION  
SREF    5500.0000    50.FT.  
LREF    327.7800    IN.  
BREF    2348.0400    IN.  
XMRP    1339.9000    IN. XC  
YMRP    .0000    IN. YC  
ZMRP    190.7500    IN. ZC  
SCALE    .0125

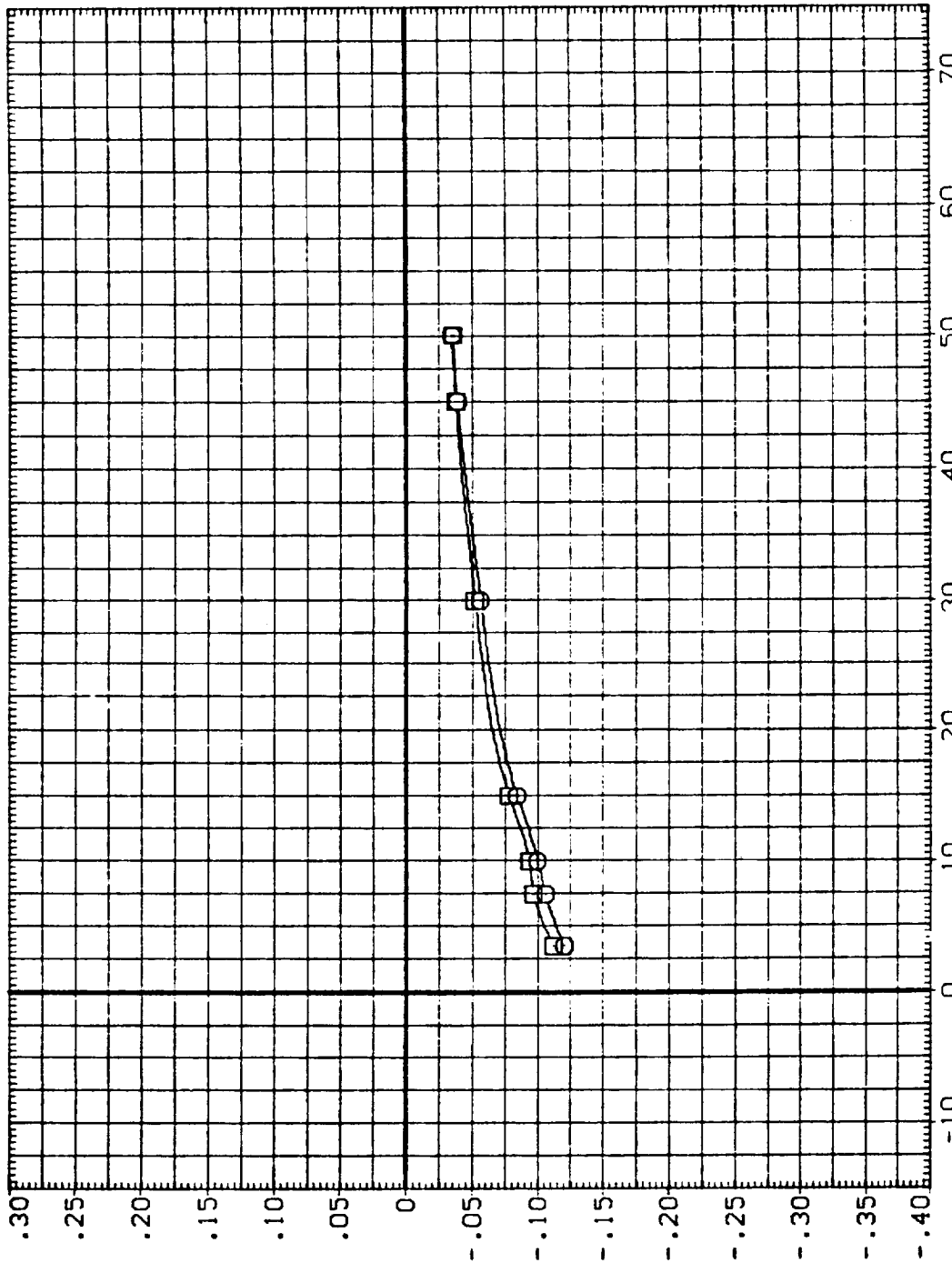


FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
(B)ALPHAC= 4.00    PAGE 332

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	37.7800 IN.
BREF	2348.0400 IN.
XMRP	1339.9000 IN.
YMRP	.0000 IN.
ZMRP	190.7500 IN.
SCALE	.0125 IN.

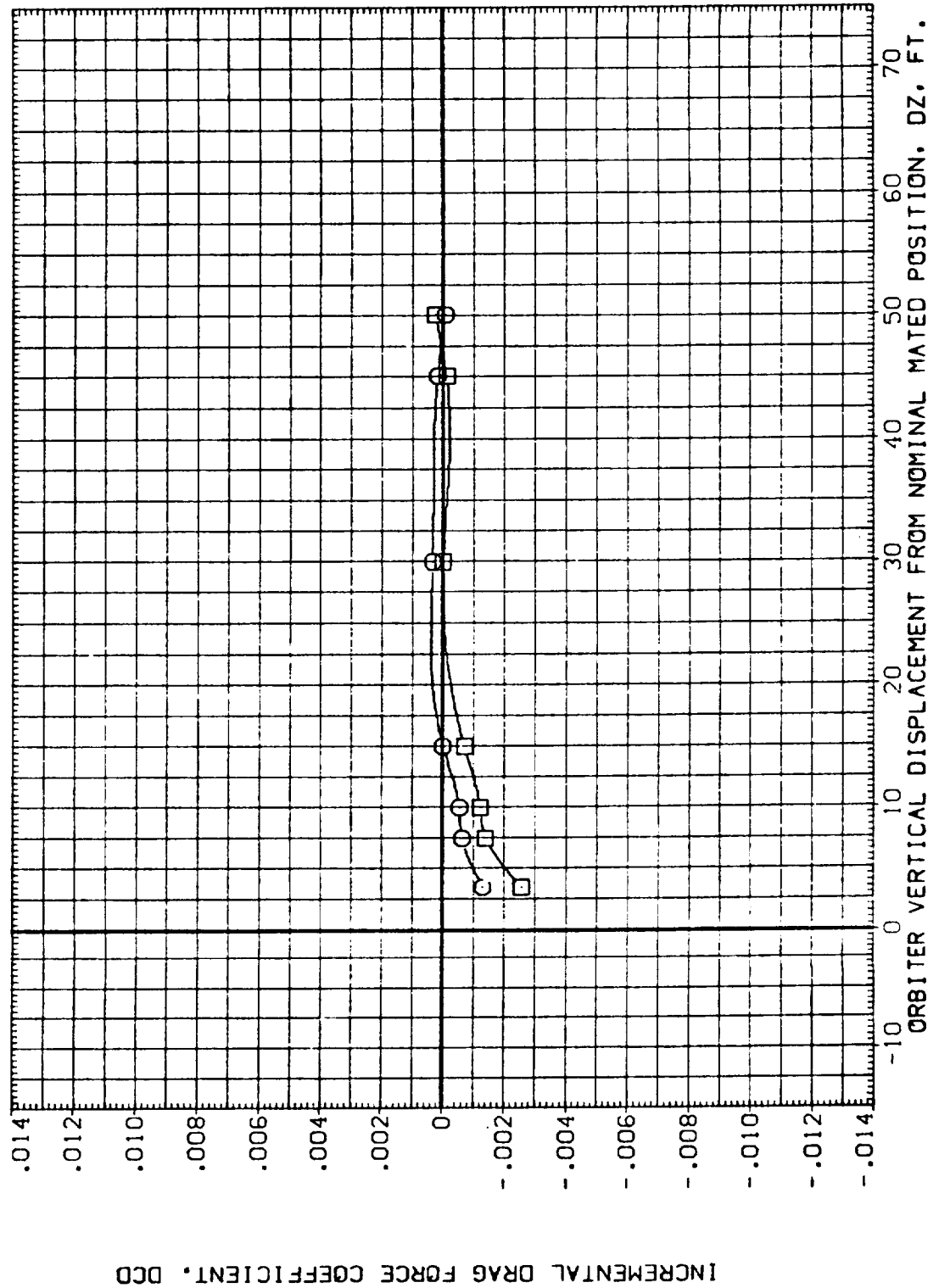


FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
(PNHY34)    □    ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
(PNHY32)    □    ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)

DY    ELEVON    IORB    MACH  
.000    .000    6.000    .600  
10.000    .000    6.000    .600

REFERENCE INFORMATION  
SREF    5500.0000    SQ.FT.  
LREF    327.7800    IN.  
BREF    2348.0400    IN.  
XMRP    1339.5000    IN. XC  
YMRP    .0000    IN. YC  
ZMRP    190.7500    IN. ZC  
SCALE    .0125

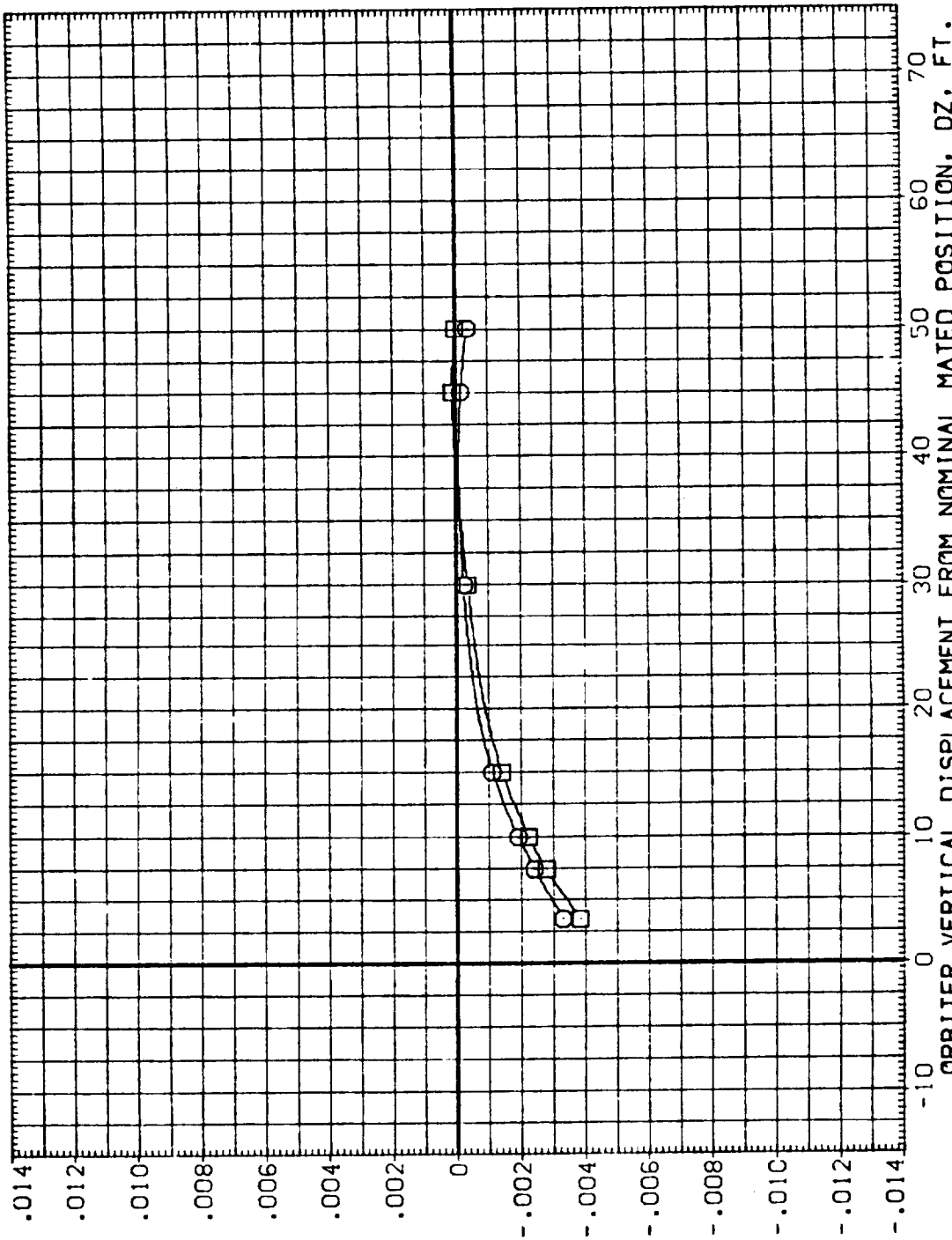
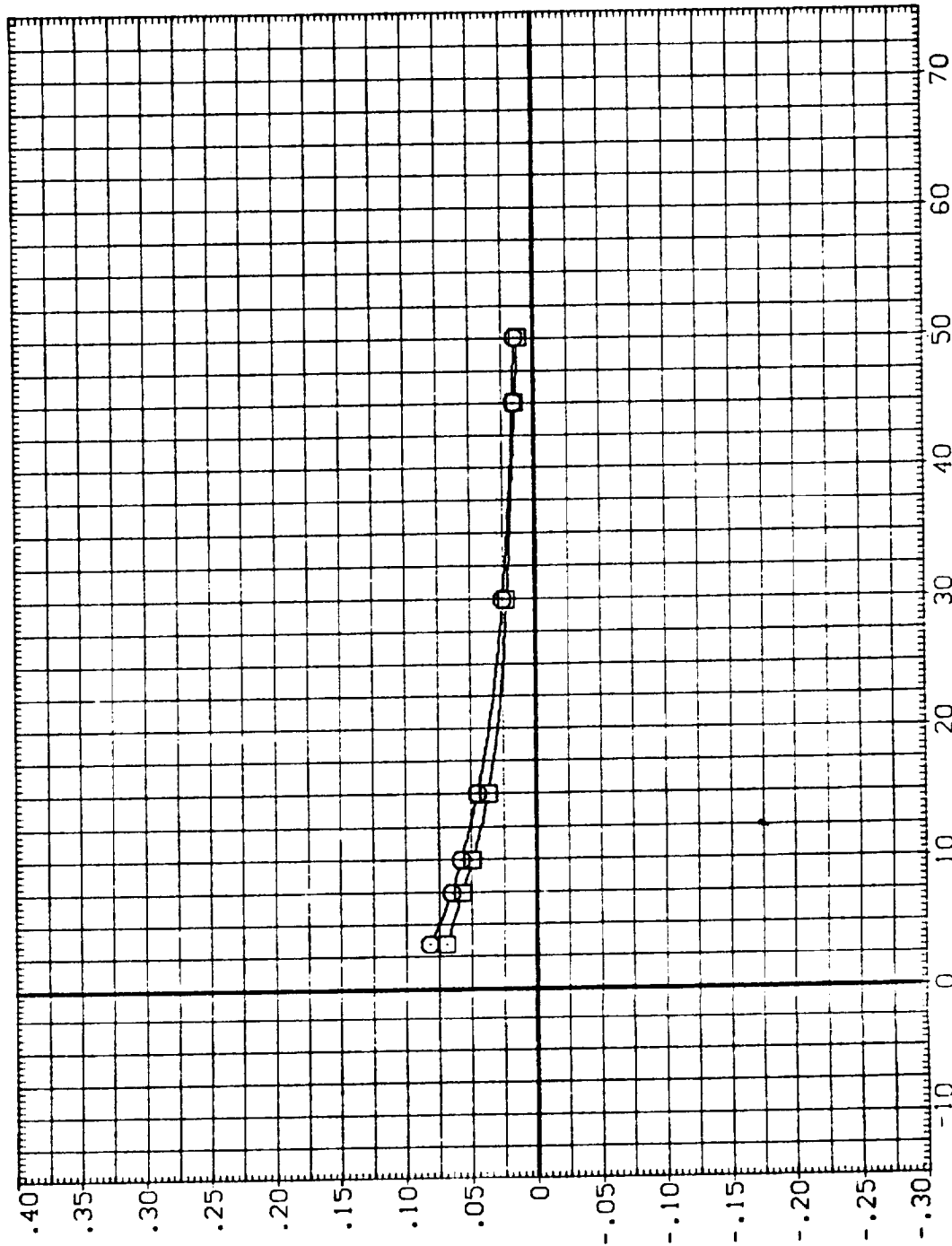


FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
(B)ALPHAC= 4.00 .



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHY34)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNHY32)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

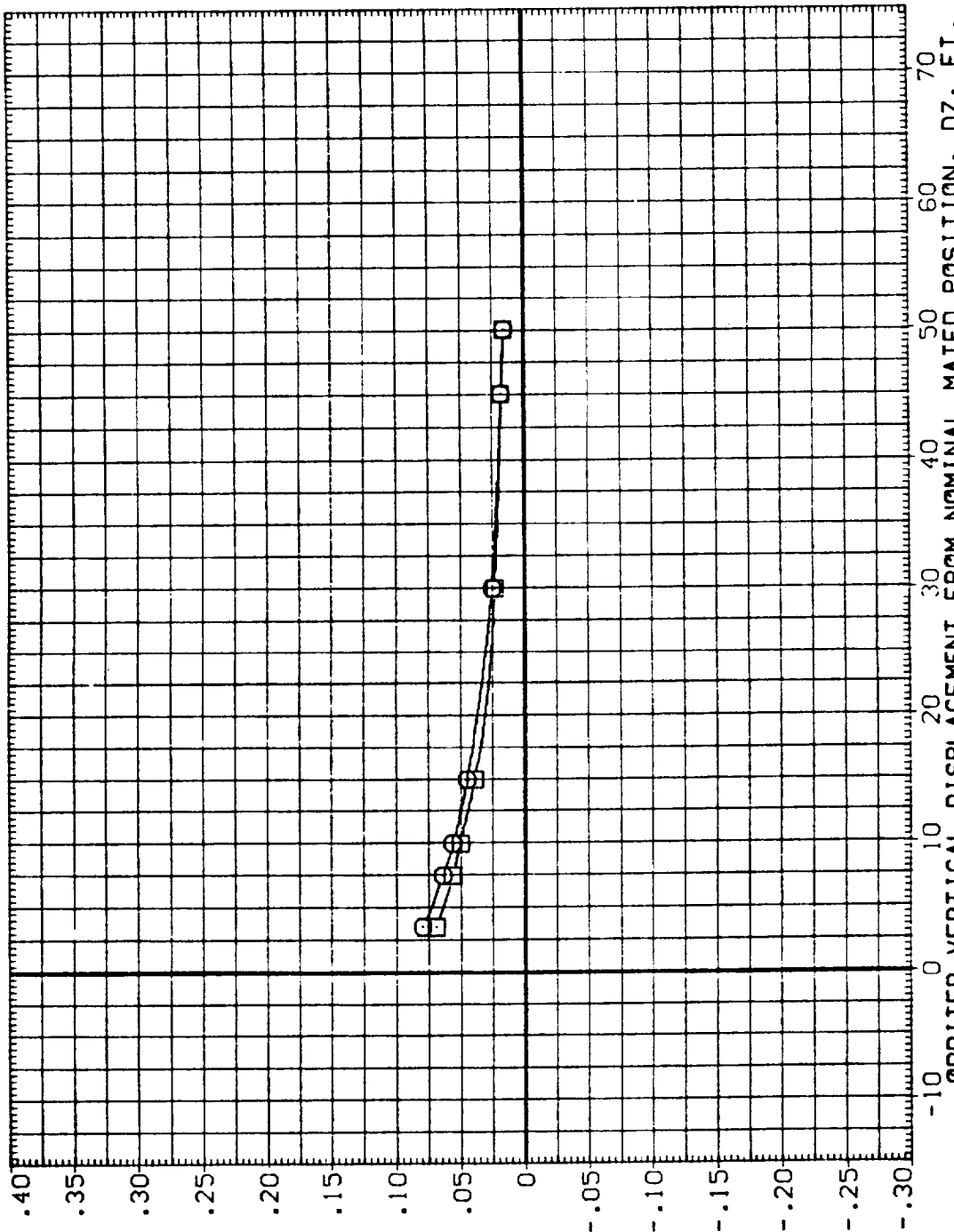
FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)

DATA SET SYMBOL  
(PNHY34)  
(PNHY32)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

DY 10.000  
ELEVON .000  
MACH .600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 42 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C ON,ORB= 6.0 DEG)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VINY34)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(VINY32)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

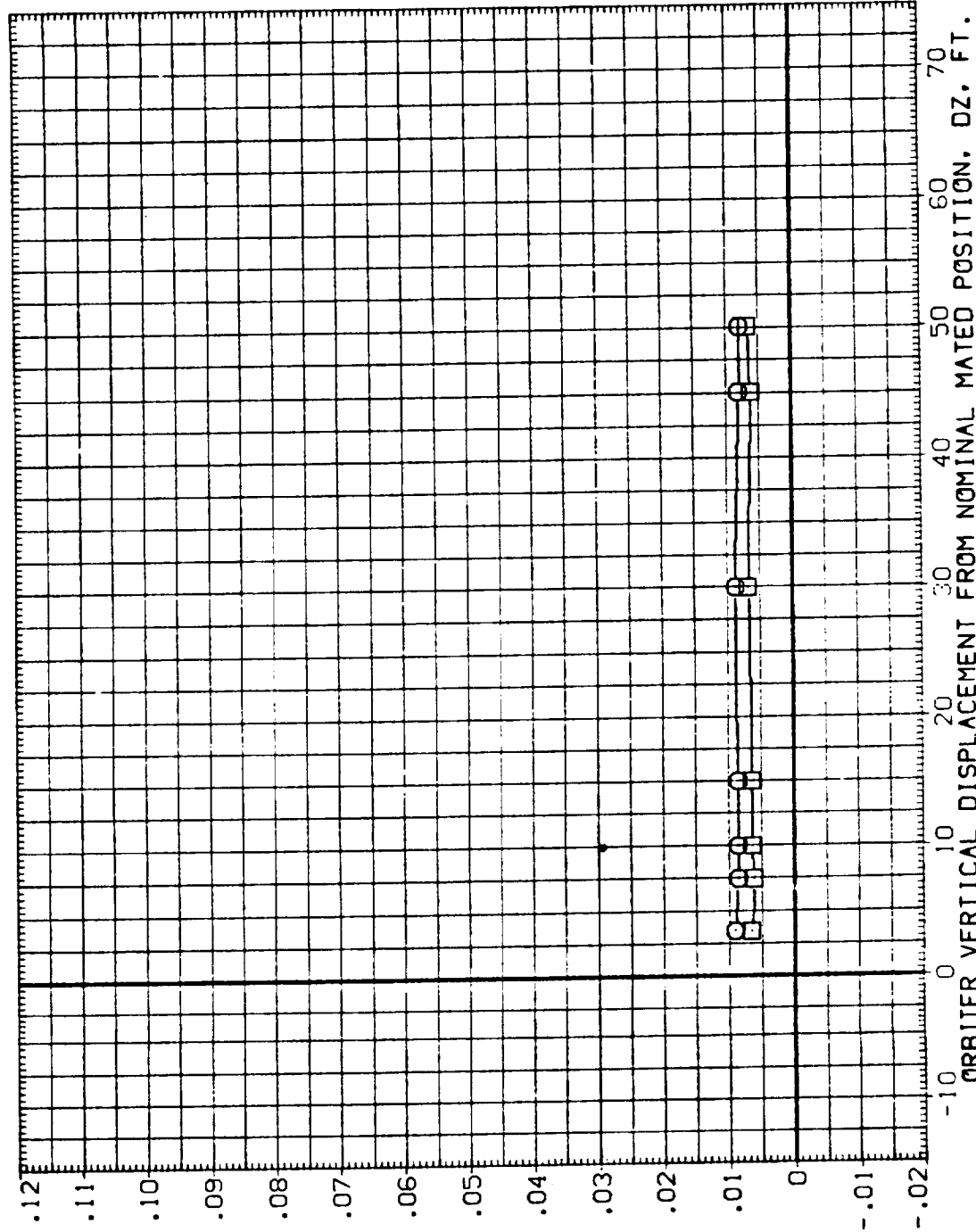


FIG. 43 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB 1/C ON, IORB= 6.0 DEG)  
(A) ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (VNHV34) ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
 (VNHV32) ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XHRP 1109.0000 IN. X0  
 YHRP .0000 IN. Y0  
 ZHRP 375.0000 IN. Z0  
 SCALE .0125

ORBITER  
 6.000  
 6.000  
 6.000

ELEVON  
 .000  
 .000  
 .000

DY  
 .000  
 10.000

MACH  
 .600  
 .600

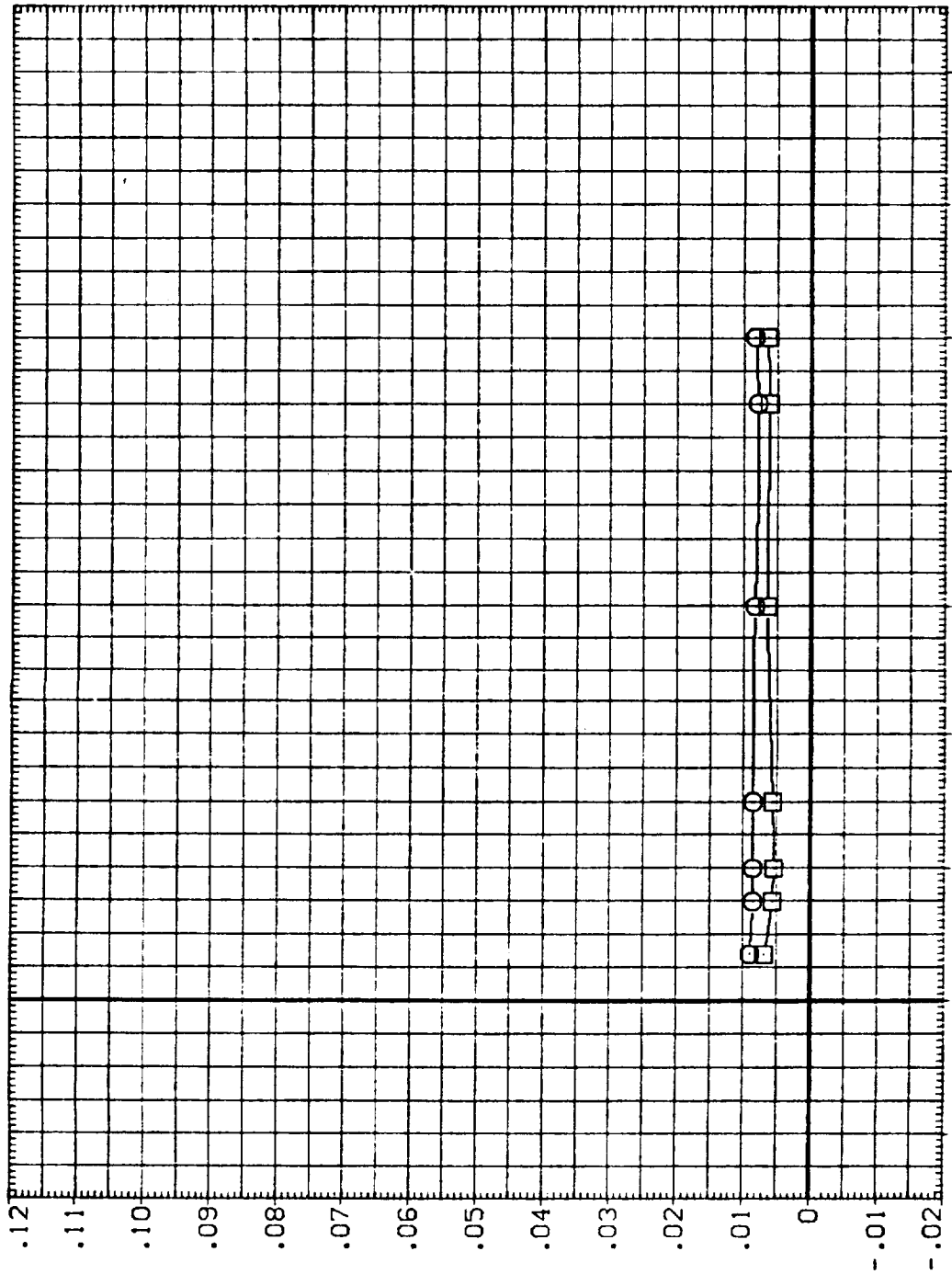
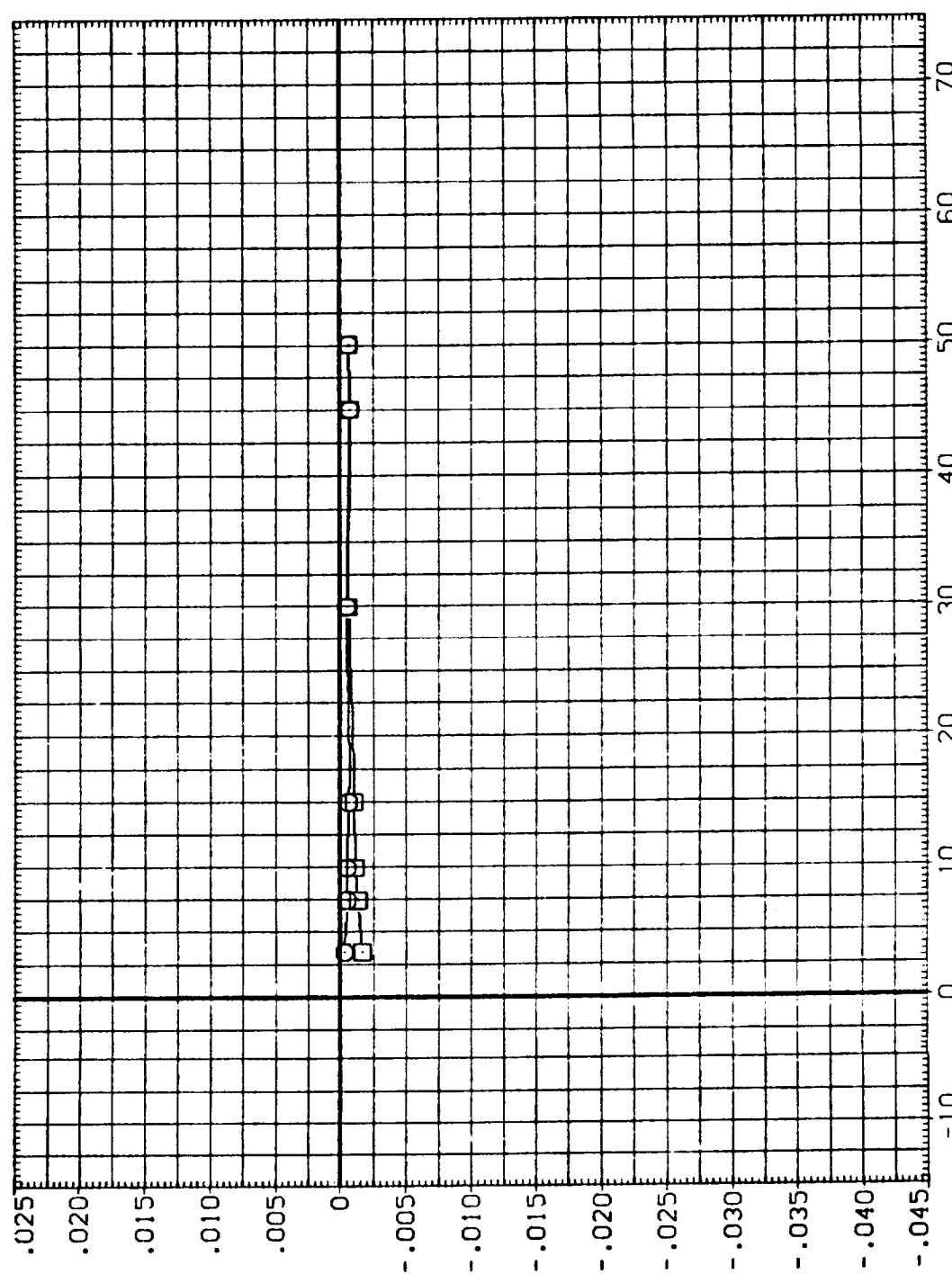


FIG. 43 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C ON,ORB= 6.0 DEG)  
 (B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNH34)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SO.FT.
(VNH32)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 43 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 6.0 DEG)

(A)ALPHAC= 2.00

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(VNY34) 8 ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)  
(VNY32) 8 ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)

DY 0.000  
ELEVON .000  
MACH .600

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

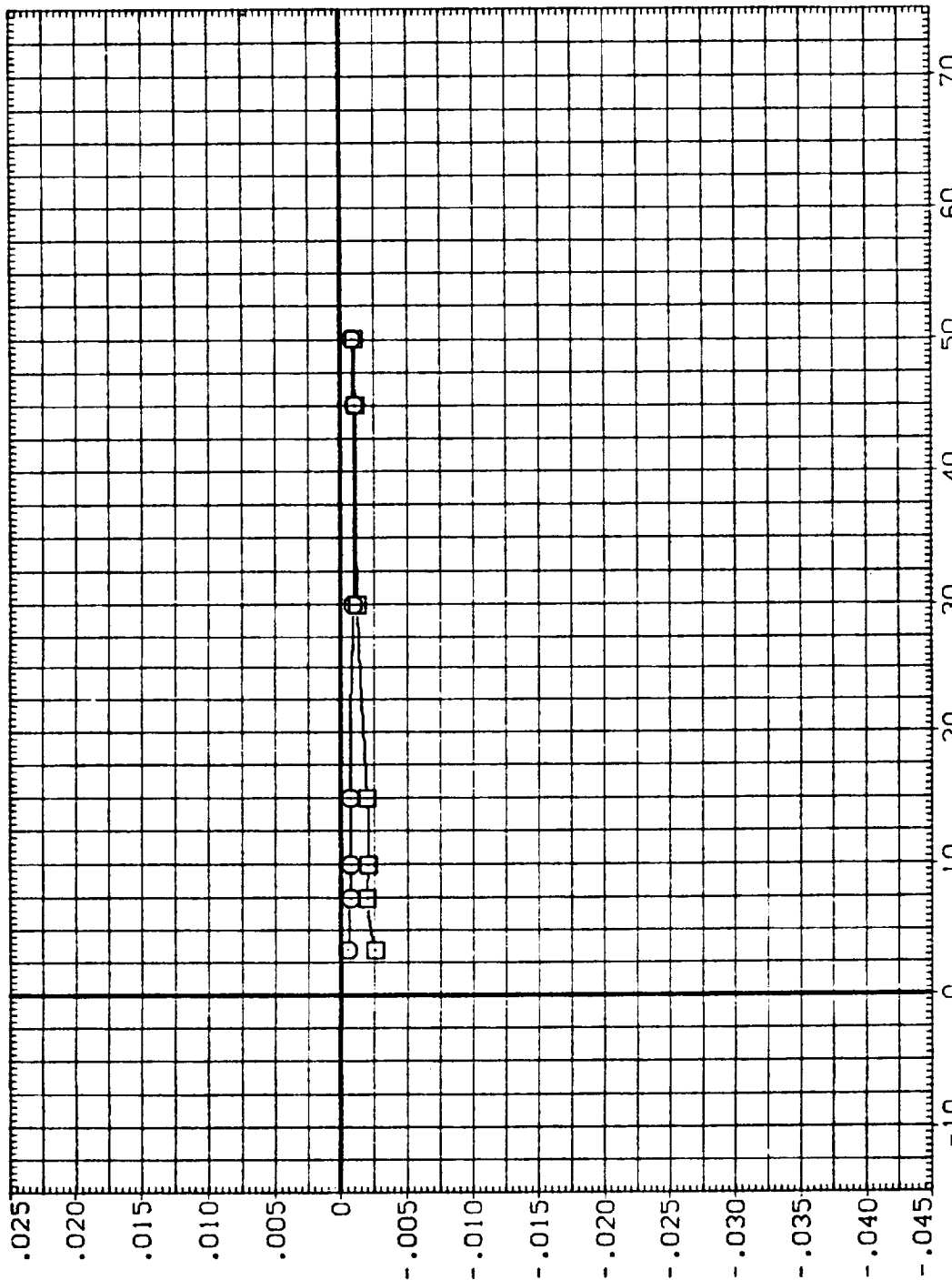


FIG. 43 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
(B)ALPHAC= 4.00  
PAGE 340

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNHV34)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(VNHV32)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

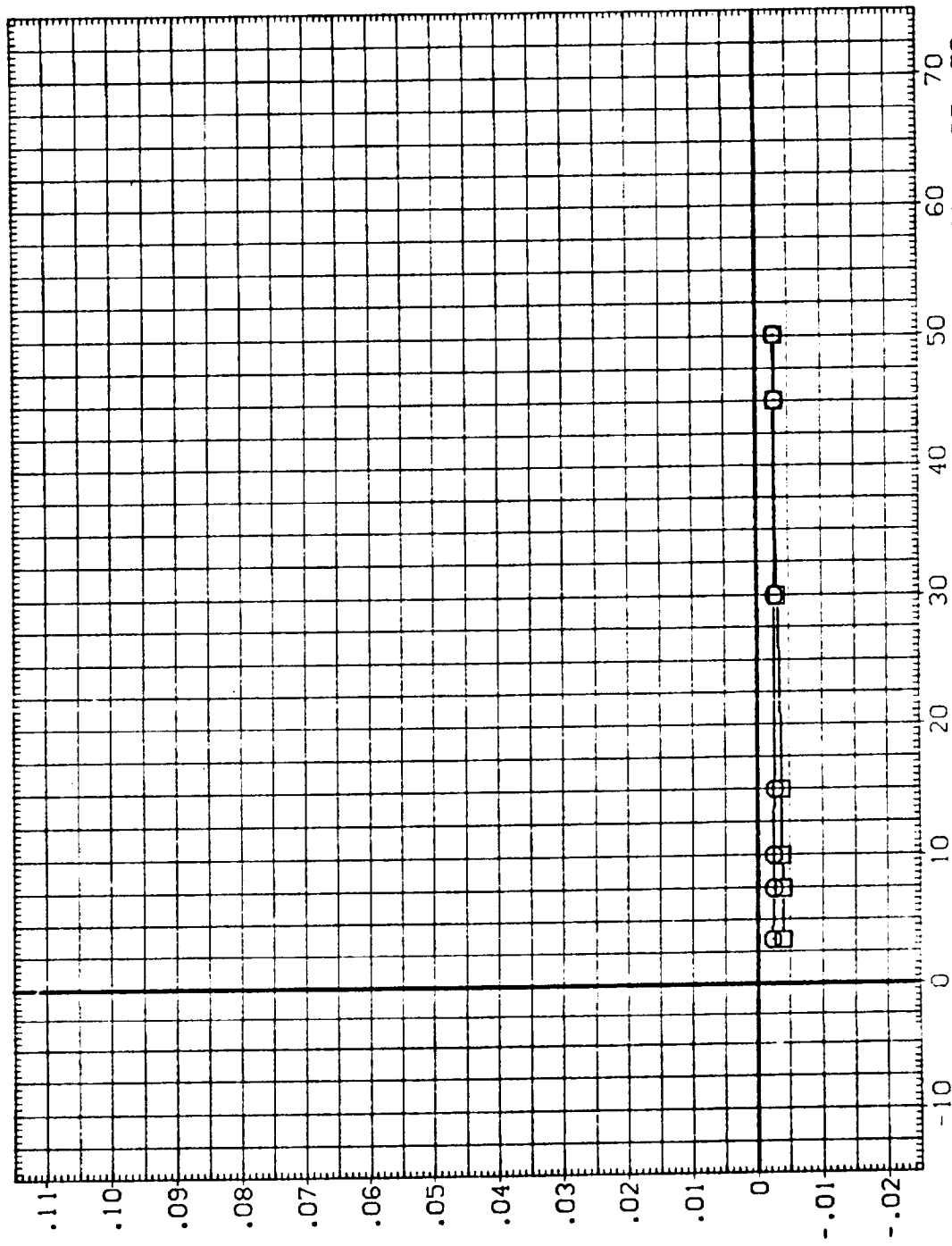


FIG. 43 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
 (A) ALPHA C= 2.00

DATA SET SYMBOL  
(VNHV34)  
(VNHV32)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)

REFERENCE INFORMATION  
SREF 2690.0000 50.FT.  
LREF 474.8100 IN.  
RRFF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

ORBITER  
ELEVON  
DY  
MACH  
6.000  
6.000  
10.000  
6.000  
6.000

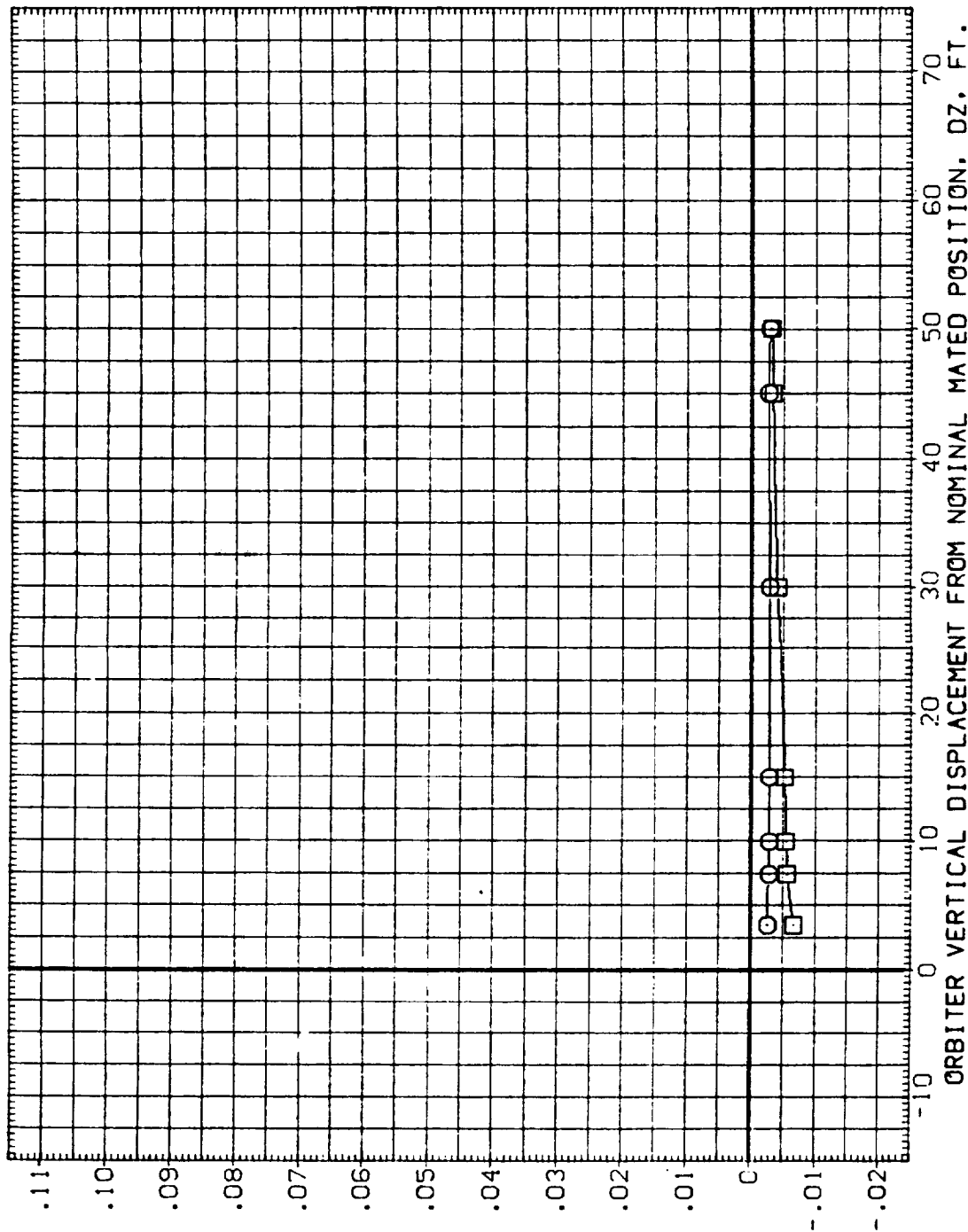
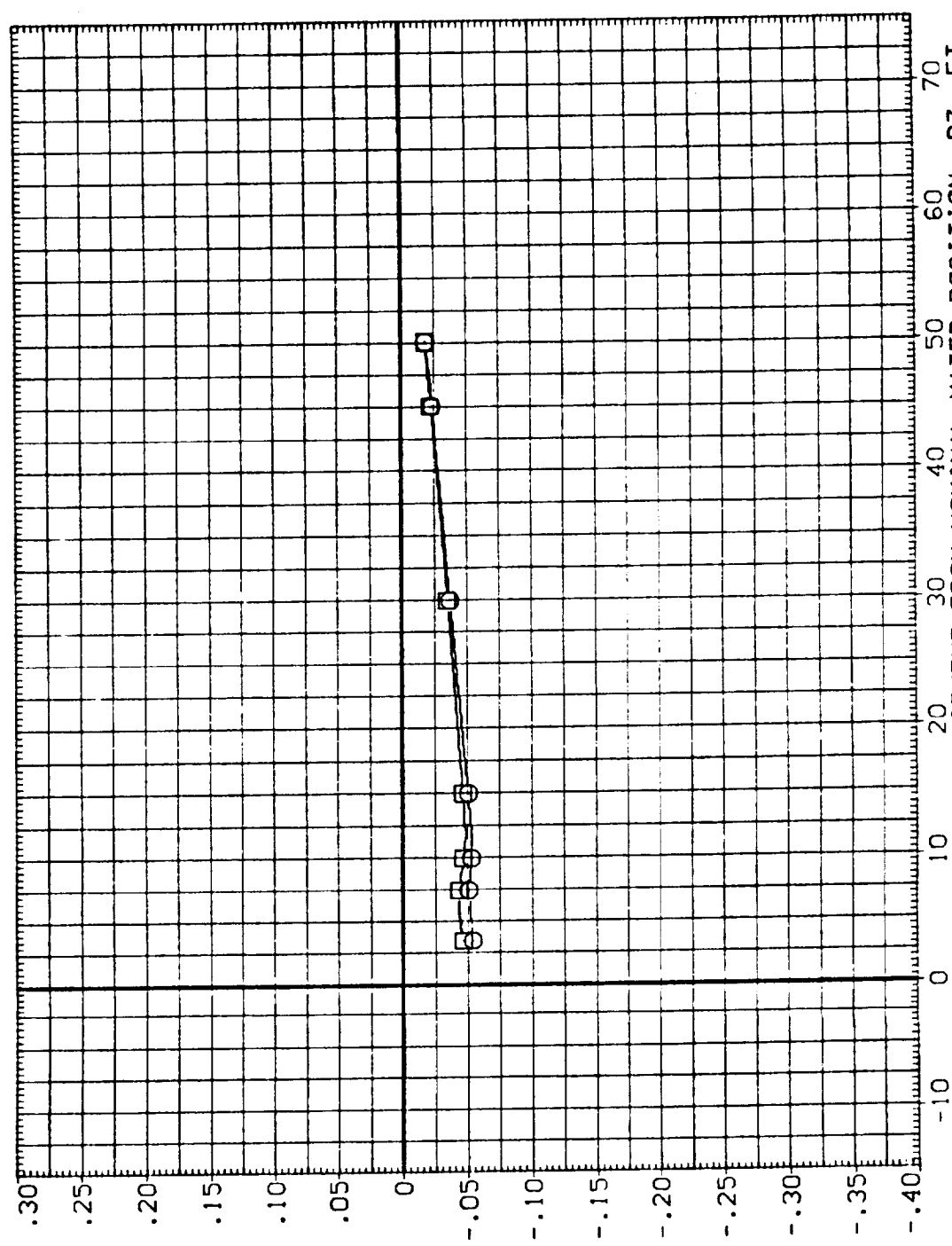


FIG. 43 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 6.0 DEG)  
(B)ALPHAC= 4.00

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHV34)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NHV32)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 43 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)

(A) ALPHAC= 2.00

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DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
(4NHV34)    ARC 14-120(CA238)    747/1    AT1    03S1    (ORB1TER DATA)  
(4NHV32)    ARC 14-120(CA238)    747/1    AT1    03S1    (ORB1TER DATA)

DY    ELEVON    IORB    MACH  
10.000    .000    6.000    .600

REFERENCE INFORMATION  
SREF    2690.0000    SC.F.T.  
LREF    474.8100    IN.  
BREF    936.6800    IN.  
XMRP    1109.0000    IN.  
YMRP    .0000    IN.  
ZMRP    375.0000    IN.  
SCALE    .0125

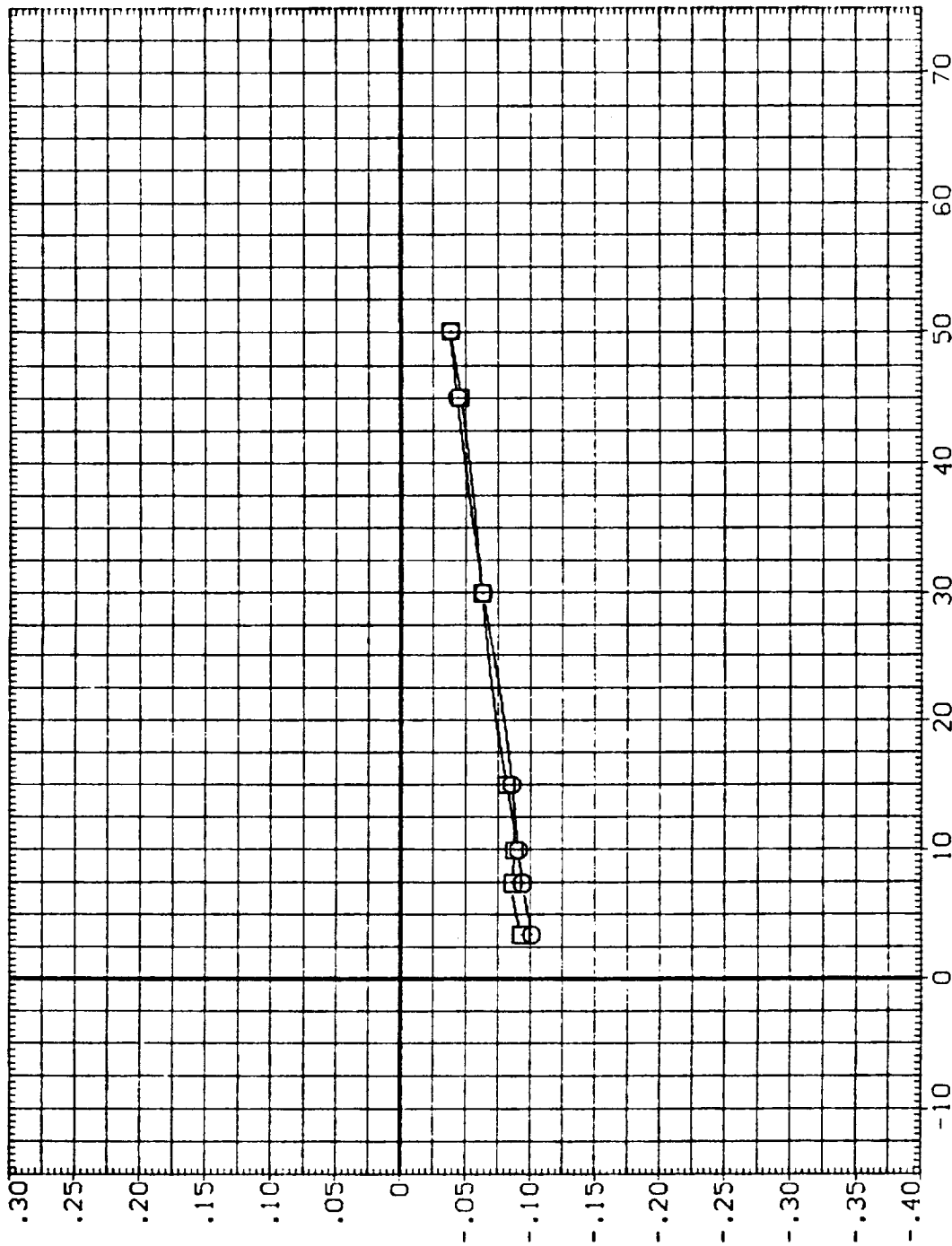


FIG. 43 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHV34)	ARC 14-120(CA238) 747/1 AT1 Q3S1 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NHV32)	ARC 14-120(CA238) 747/1 AT1 Q3S1 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN. X0
						YMRP 1109.0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

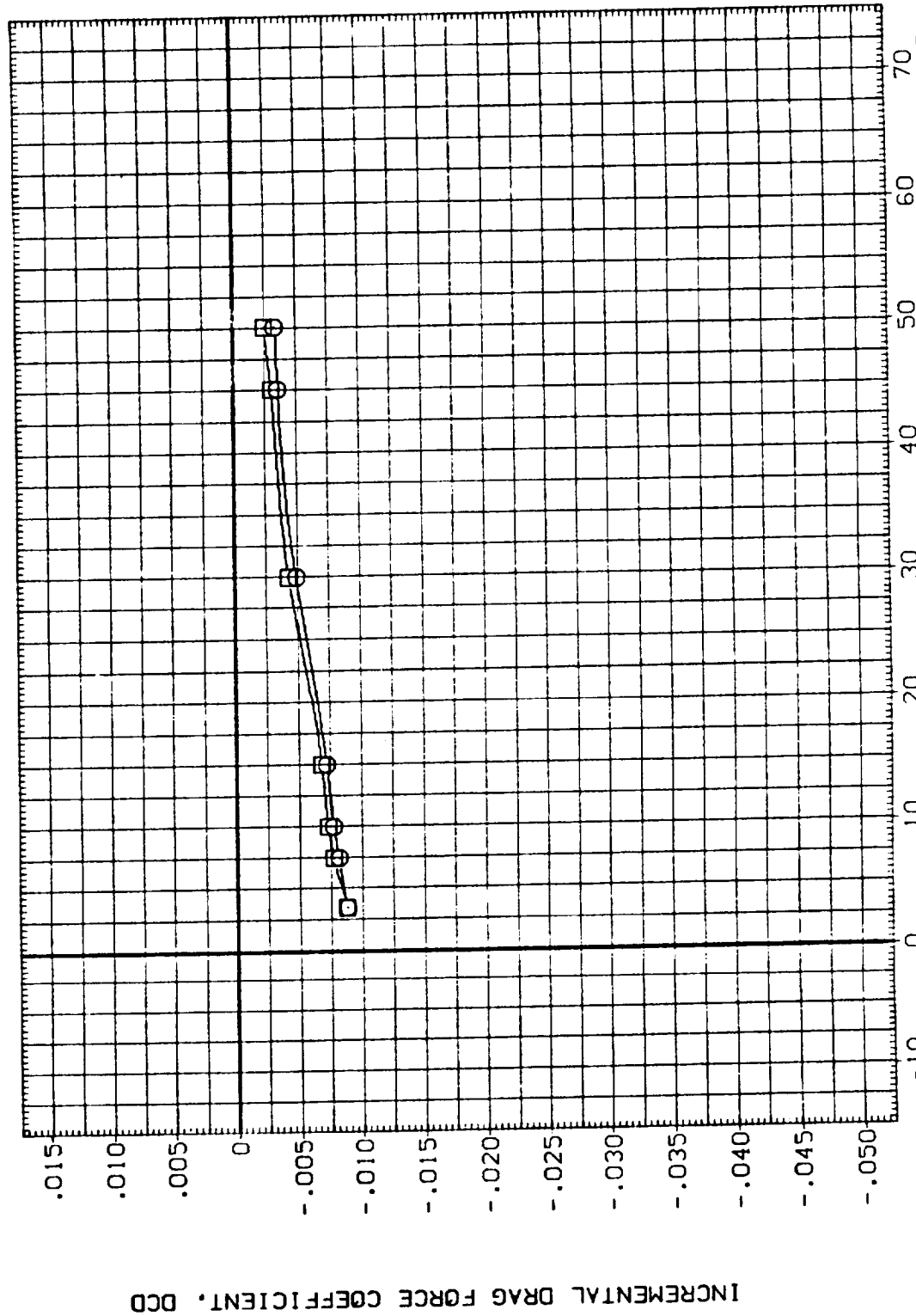


FIG. 43 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)

DATA SET SYMBOL

(4NHV34)  
(4NHV32)

CONFIGURATION DESCRIPTION

ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)

OY

.000  
10.000

ELEVON

.000  
.000

MACH

.600  
.600

IORB

6.000  
6.000

REFERENCE INFORMATION

SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

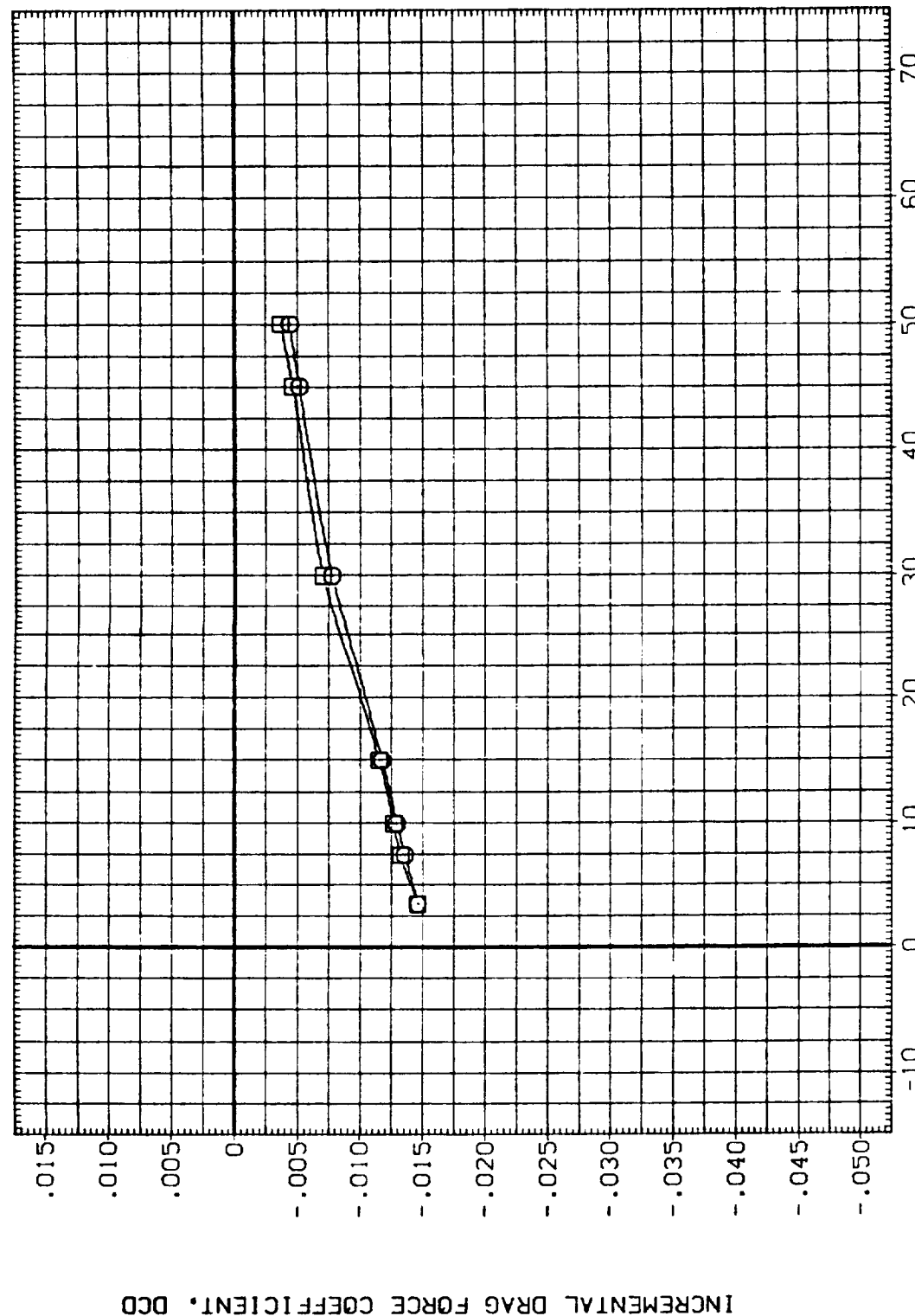


FIG. 43 EFFECT OF ORBITER OY ON ORBITER(STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NH34)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITTER DATA)	.000	.000	6.000	.600	SREF 2690.0000 50.FT.
(4NH32)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITTER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

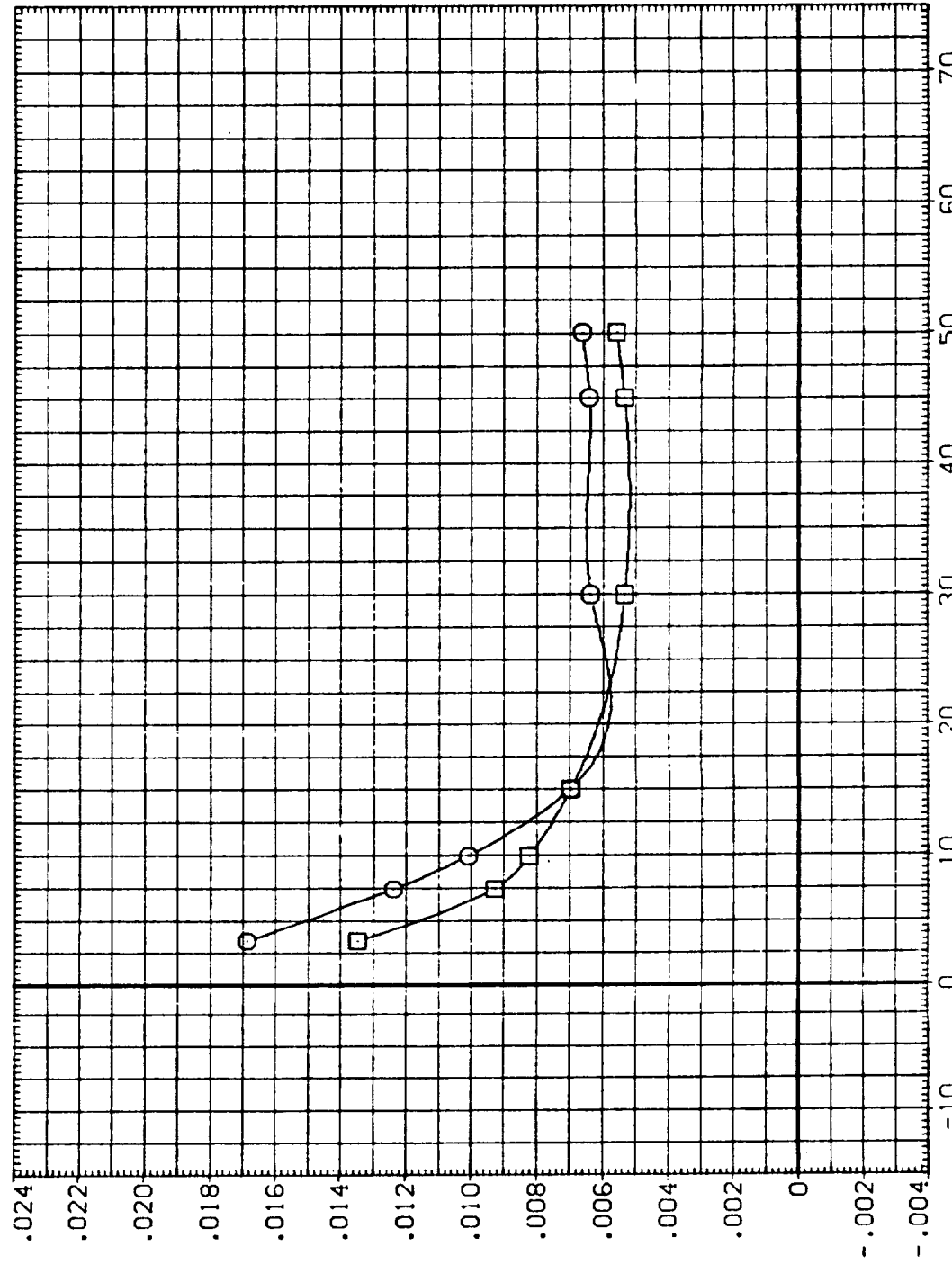


FIG. 43 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 6.0 DEG)  
 (A)ALPHAC= 2.00  
 PAGE 347

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (4NHV34)    □    ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
 (4NHV32)    □    ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)

DY    ELEVON    IORB    MACH  
 .000    .000    6.000    .600  
 10.000    .030    6.000    .600

REFERENCE INFORMATION  
 SREF    2690.0000    SQ. FT.  
 LREF    474.8100    IN.  
 BREF    936.6800    IN.  
 XMRP    1109.0000    IN. X0  
 YMRP    .0000    IN. Y0  
 ZMRP    375.0000    IN. Z0  
 SCALE    .0125

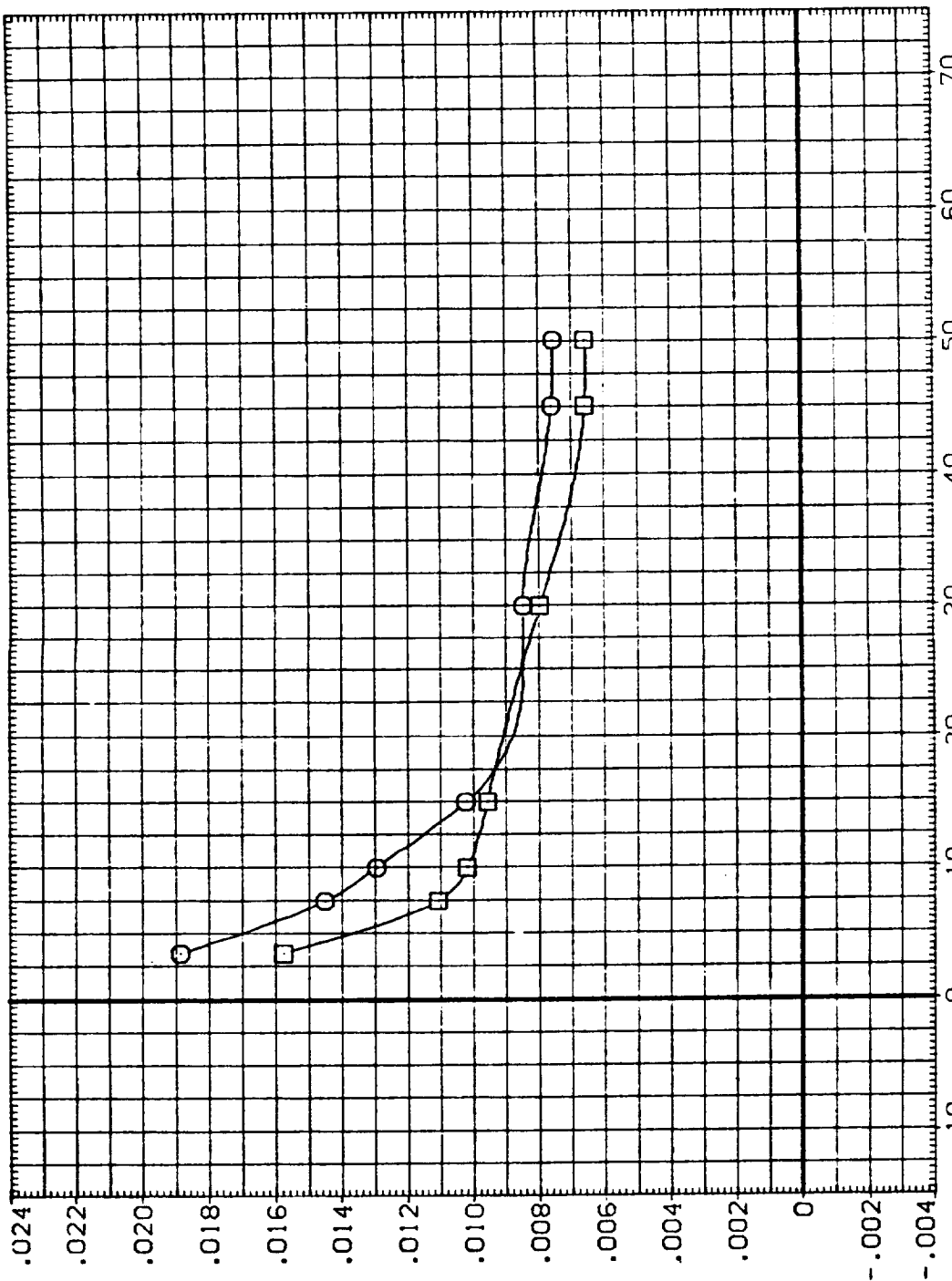
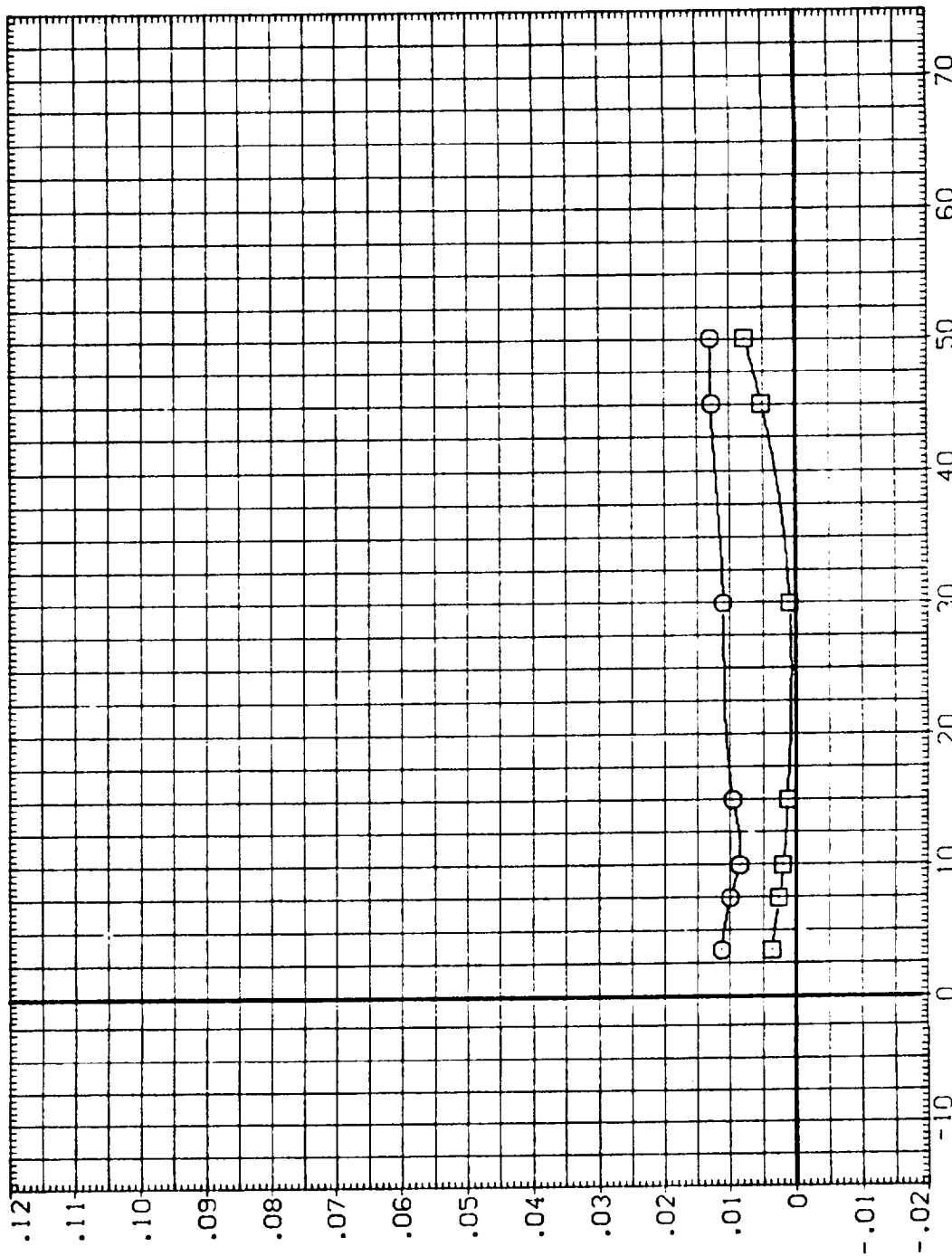


FIG. 43 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 6.0 DEG)  
 (B) ALPHAC= 4.00    PAGE 348

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	ICRB	MACH	REFERENCE INFORMATION
(UNHY27)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 SQ.FT.
(UNHY33)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



SIDE FORCE COEFFICIENT, CY

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 44 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, ICRB= 8.0 DEG)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (UNHY27) ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
 (UNHY33) ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)

BY ELEVON IORB MACH REFERENCE INFORMATION  
 .000 .000 8.000 .600 SREF 5500.0000 SO.FT.  
 10.000 .000 8.000 .600 LREF 327.7800 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

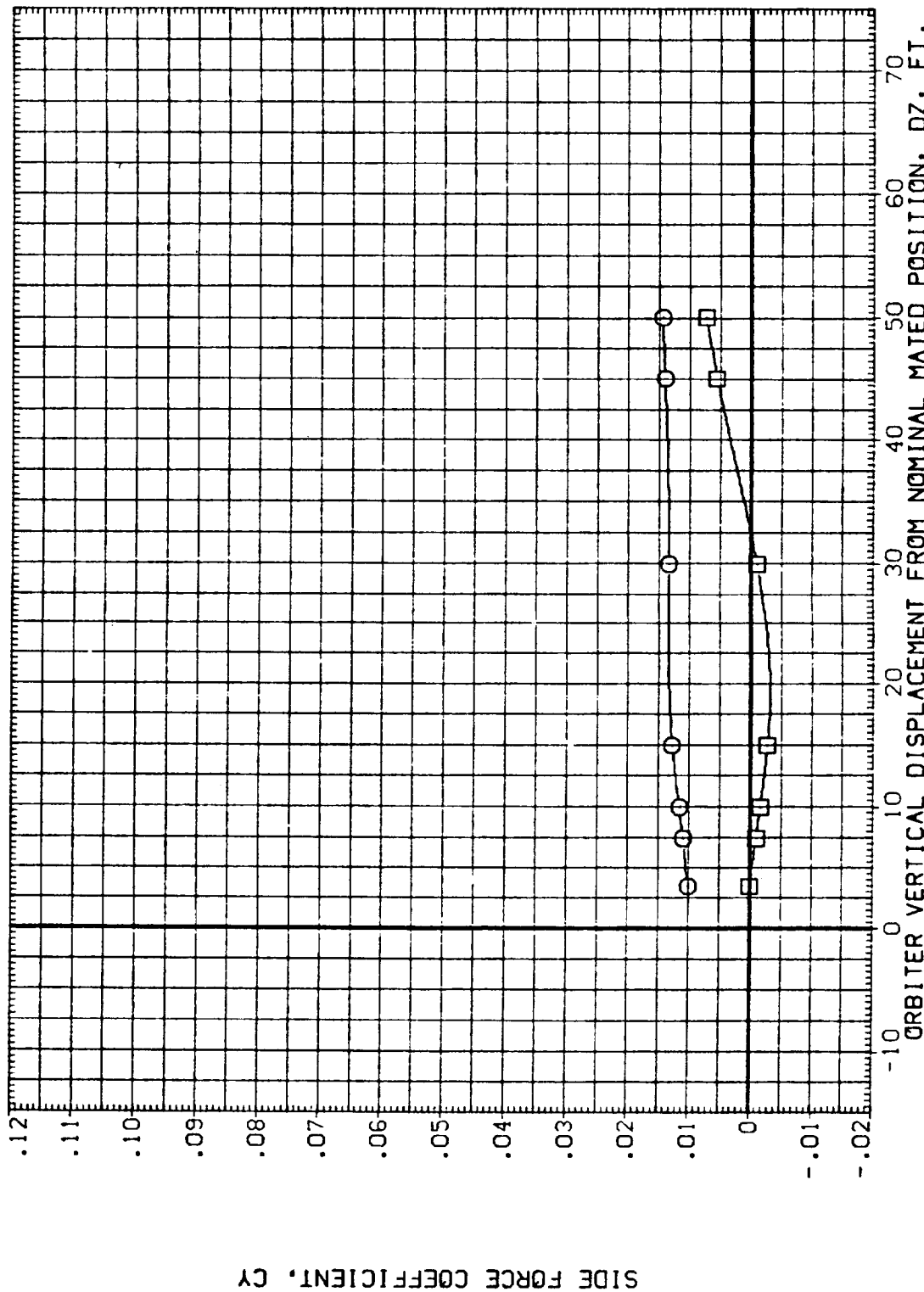


FIG. 44 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
 (B)ALPHAC= 4.00 PAGE 350



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(UNHY27)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 SQ.FT.
(UNHY33)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

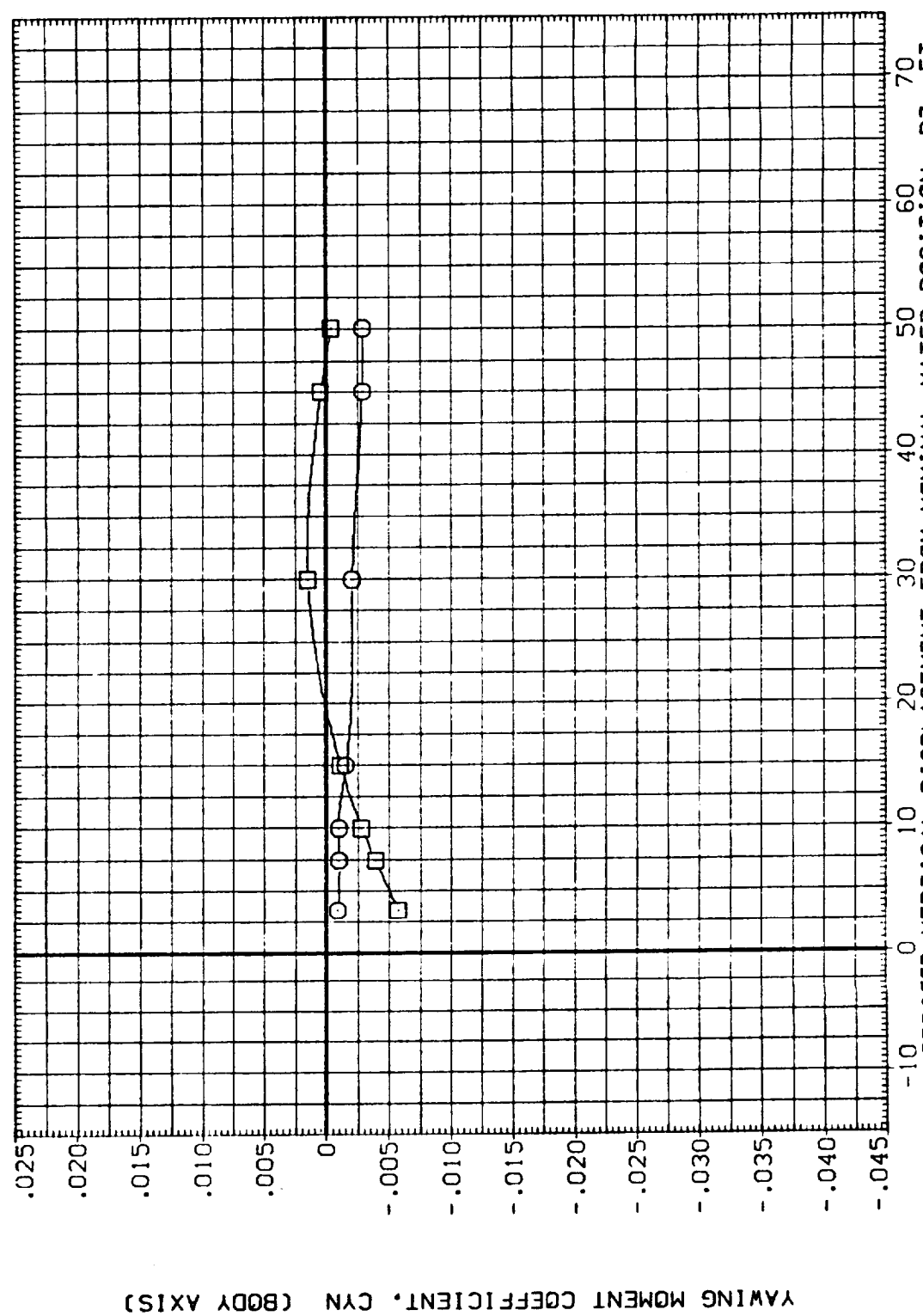


FIG. 44 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)

(A) ALPHAC= 2.00

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TDY	ELEVON	IORB	MACH	REFERENCE	INFORMATION
-0.000	.000	8.000	.600	SREF	5500.0000 SO. FT.
10.000	.000	8.000	.600	LEEF	327.7800 IN.
				BKEF	2348.0400 IN.
				XMRP	1339.5000 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0125

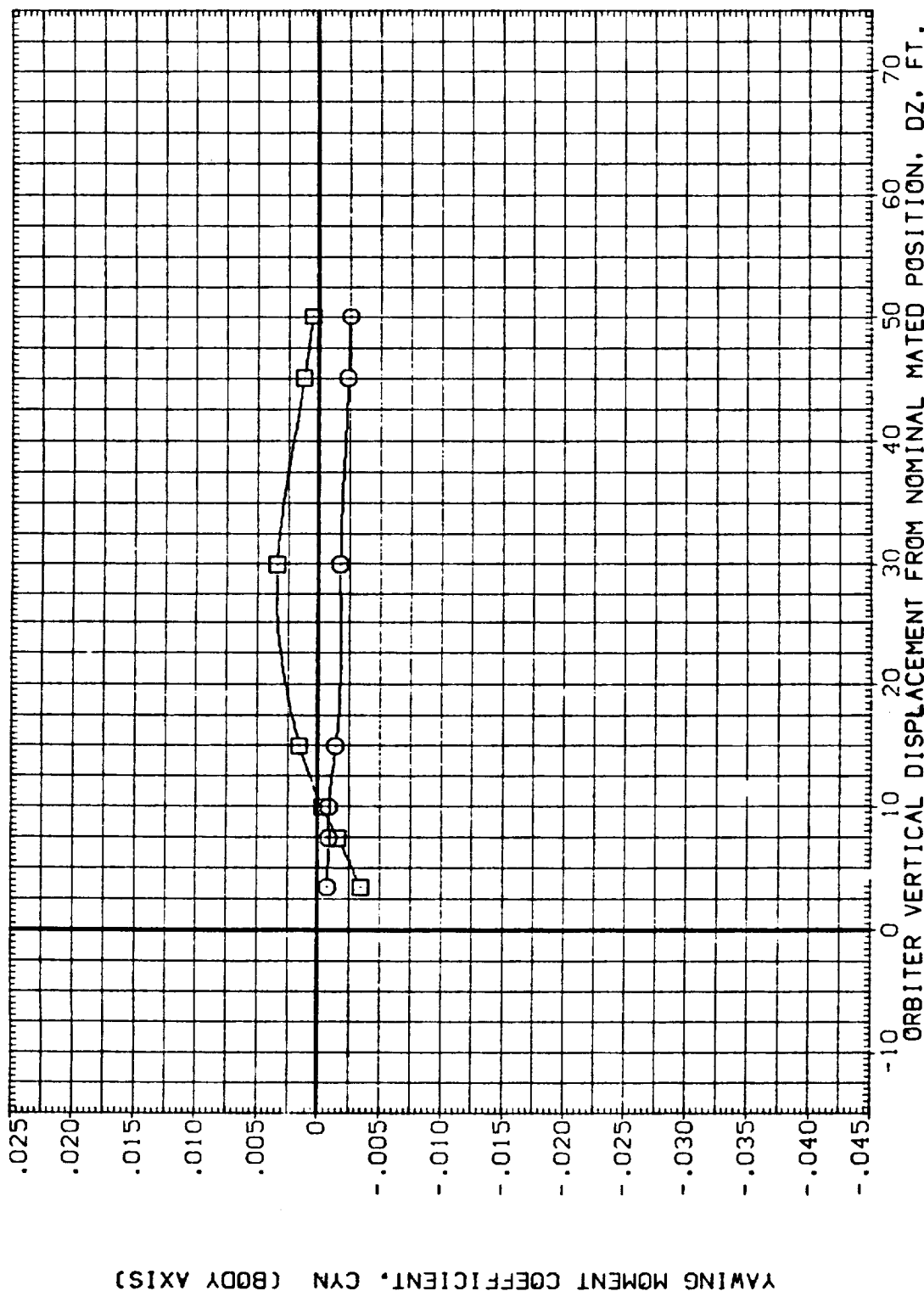


FIG. 44 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 8.0 DEG)  
(B)ALPHAC= 4.00 PAGE 352

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(UNHY27)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 SQ.FT.
(UNHY33)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						VMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

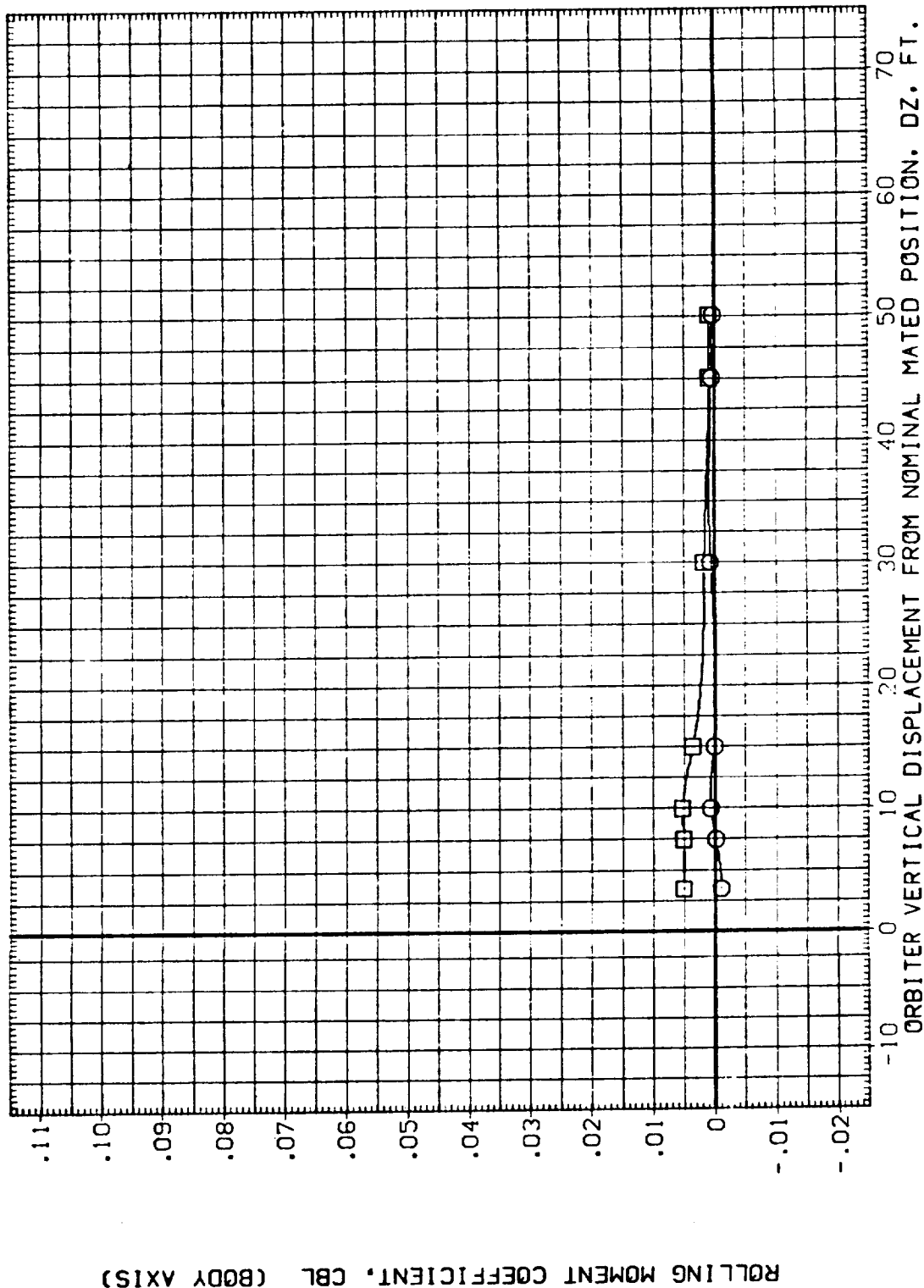


FIG. 44 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(A) ALPHAC= 2.00

DATA SET SYMBOL  
(UNHY27)  
(UNHY33)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

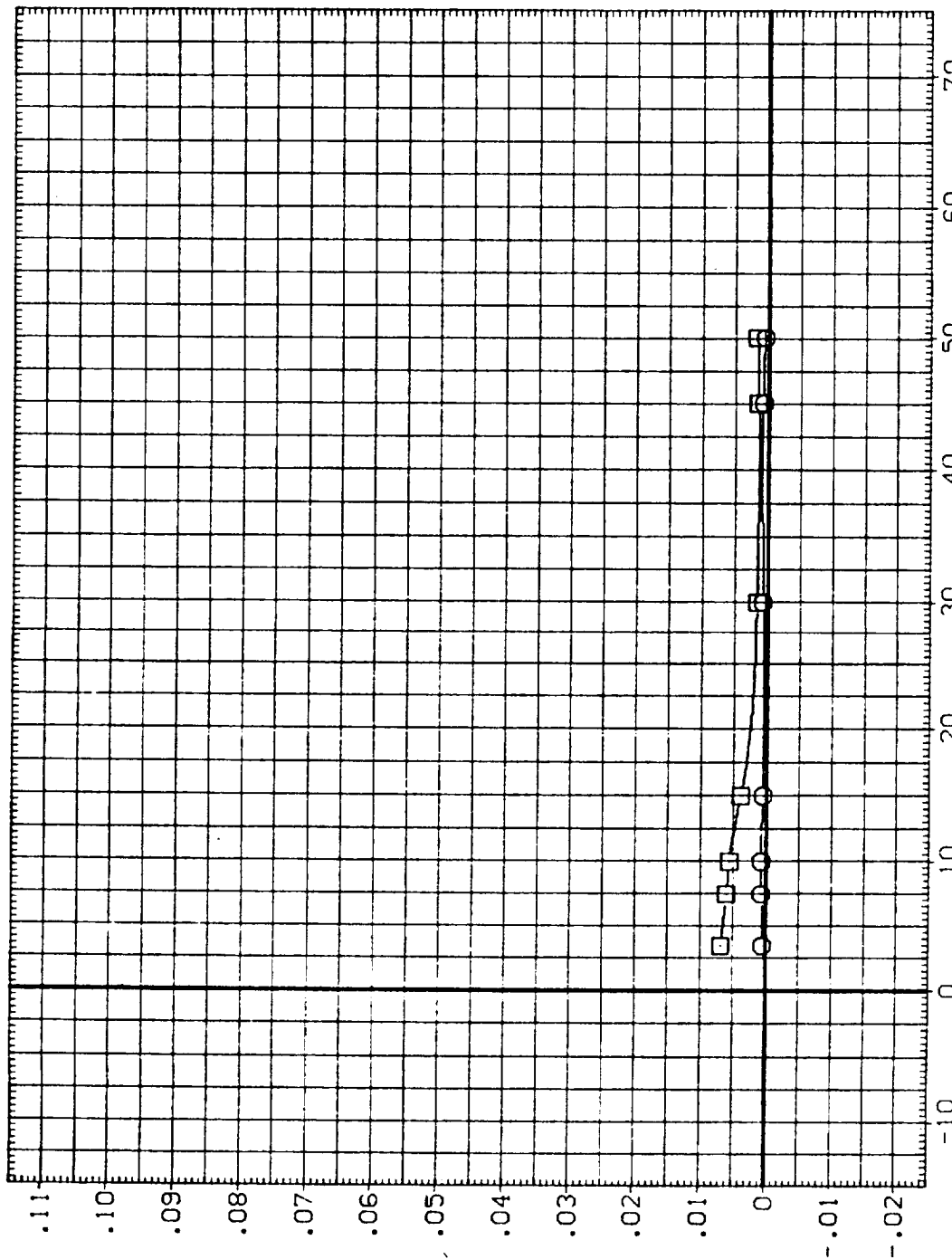
DY .000  
10.000

ELEVON .000  
.000

IORB 8.000  
8.000

MACH .600  
.600

REFERENCE INFORMATION  
SREF 5500.0000 50.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, OZ. FT.

FIG. 44 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB 1/C ON, IORB= 8.0 DEG)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHY27)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 50.FT.
(PNHY33)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

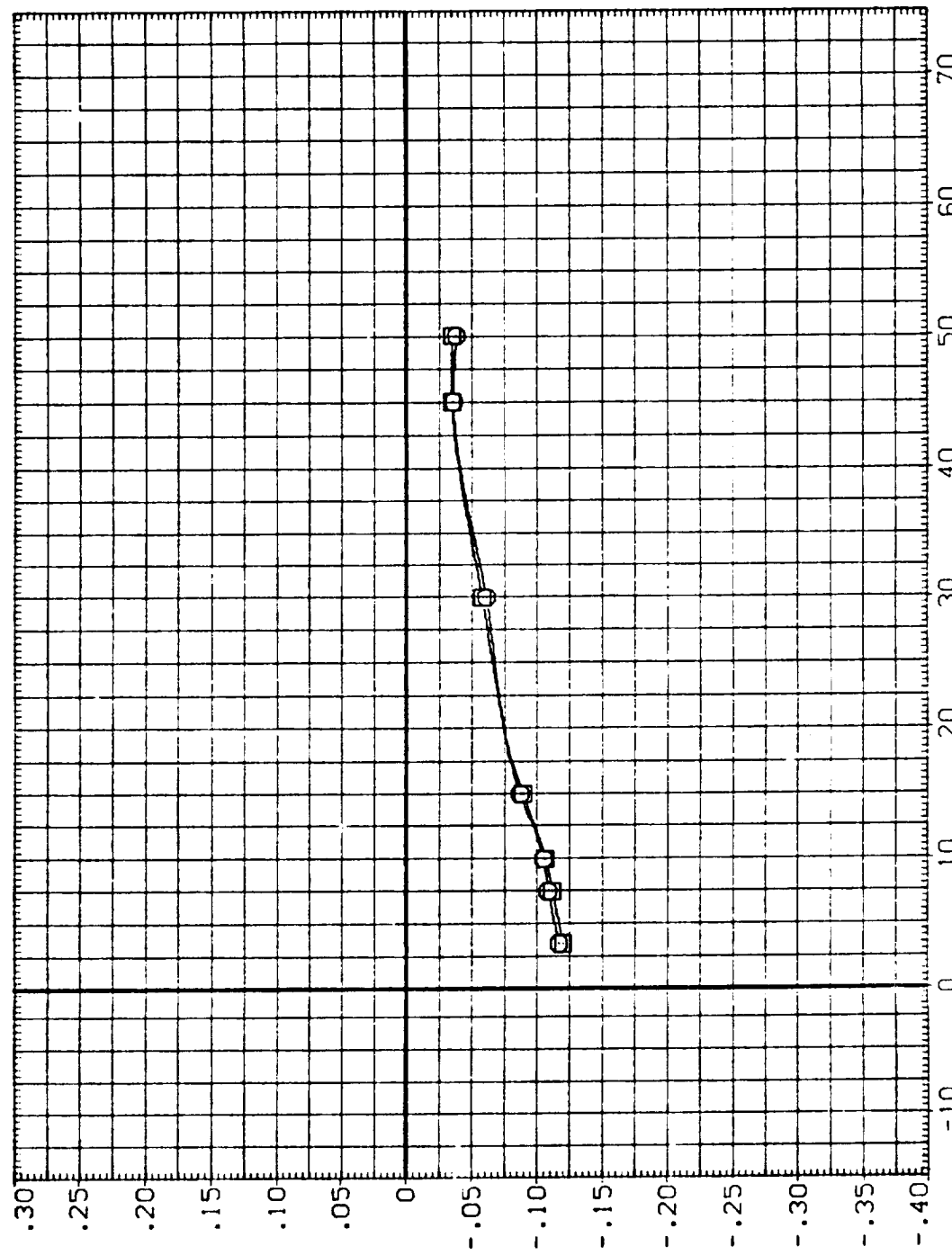


FIG. 44 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., IORB= 8.0 DEG)  
 (A)ALPHAC= 2.00

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNHY27) ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
 (PNHY33) ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

DY ELEVON IORB MACH  
 .000 .000 .600  
 10.000 .000 .600

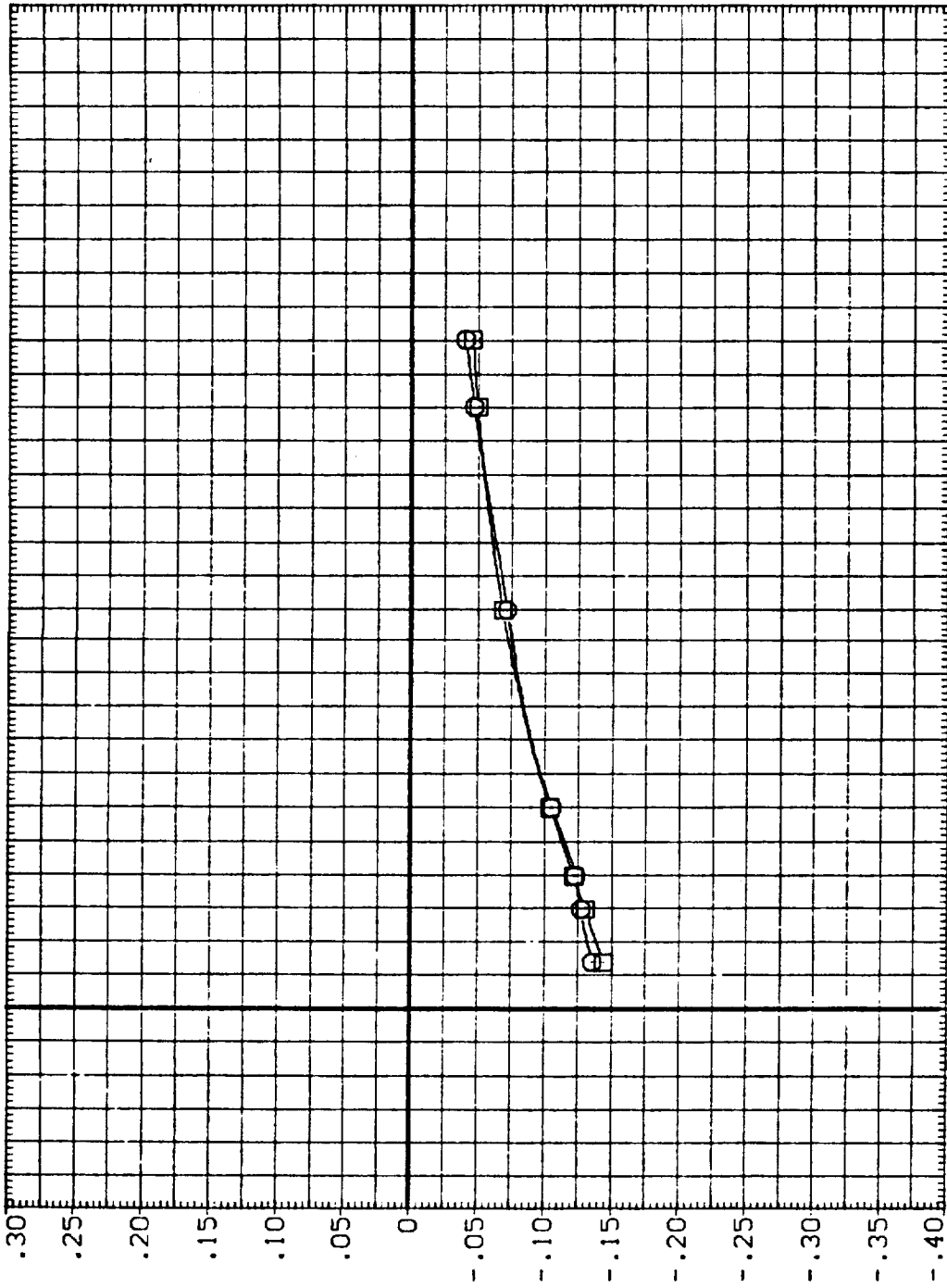


FIG. 44 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
 (B) ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(PNHY27)	ARC 14-120(CA238) 747/1 AT1 Q351 (CARRIER DATA)	.000	.000	8.000	.600	SREF 5500.0000 SQ.FT.
(PNHY33)	ARC 14-120(CA238) 747/1 AT1 Q351 (CARRIER DATA)	10.000	.000	8.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

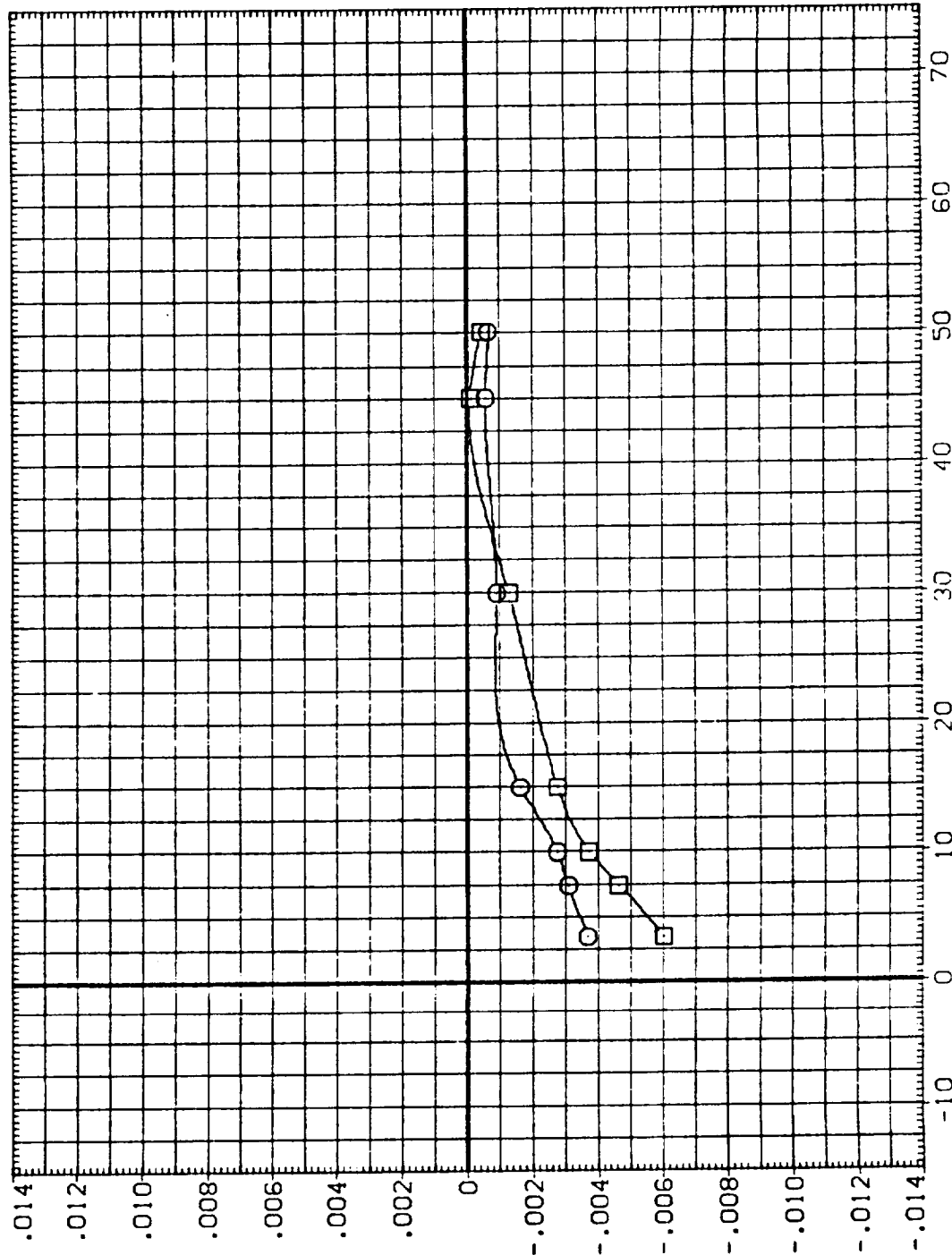


FIG. 44 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(PNHY27) □ ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
(PNHY33) □ ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)

DY .000  
10.000  
ELEVON .000  
8.000  
IORB .600  
MACH .600  
REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

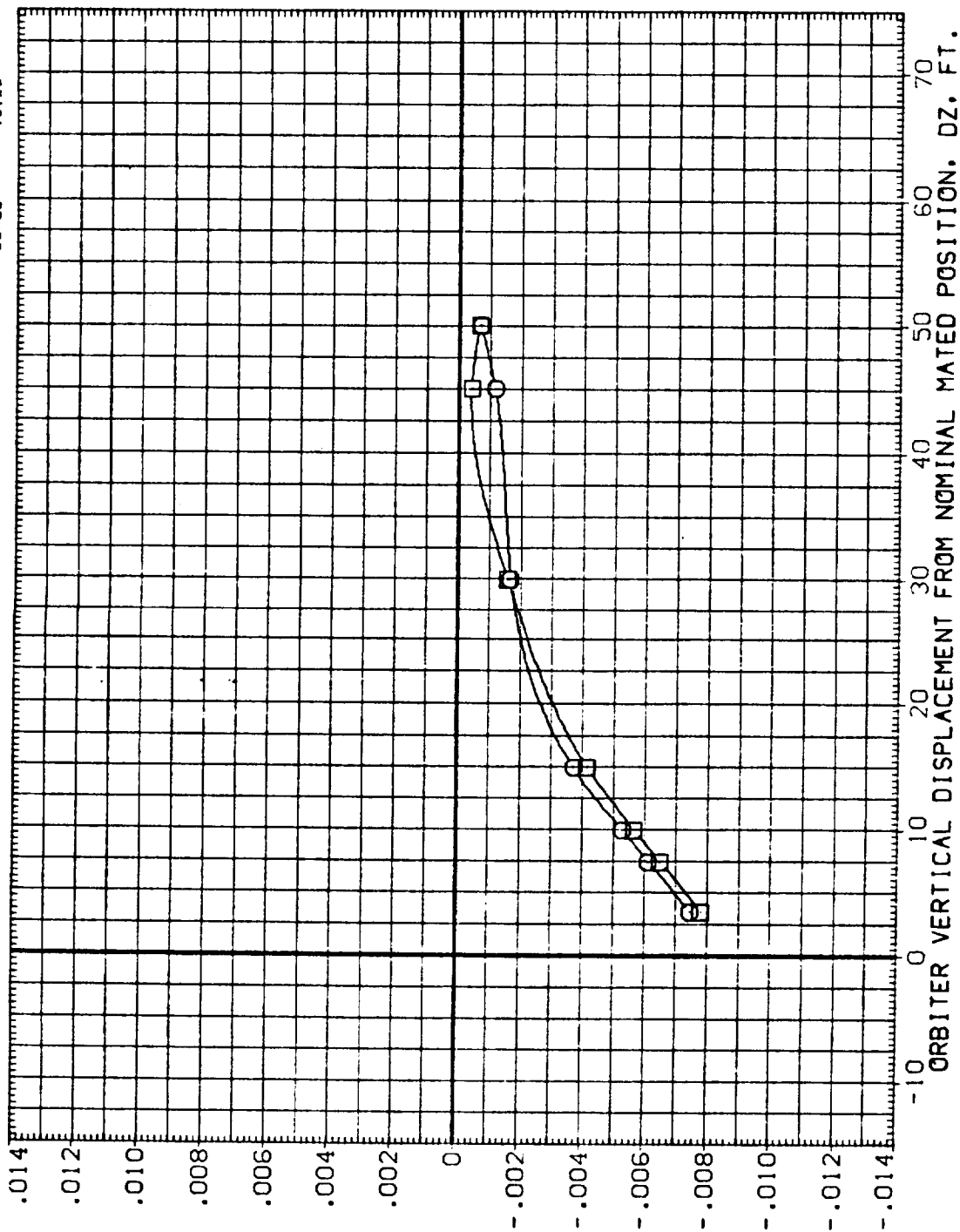


FIG. 44 EFFECT OF ORBITER DY ON CARRIER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(B) ALPHAC= 4.00



REFERENCE INFORMATION	
SREF	5500.0000 SO.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN. XC
XMRP	1339.9000 IN. YC
YMRP	.0000 IN. ZC
ZMRP	190.7500
SCALE	.0125

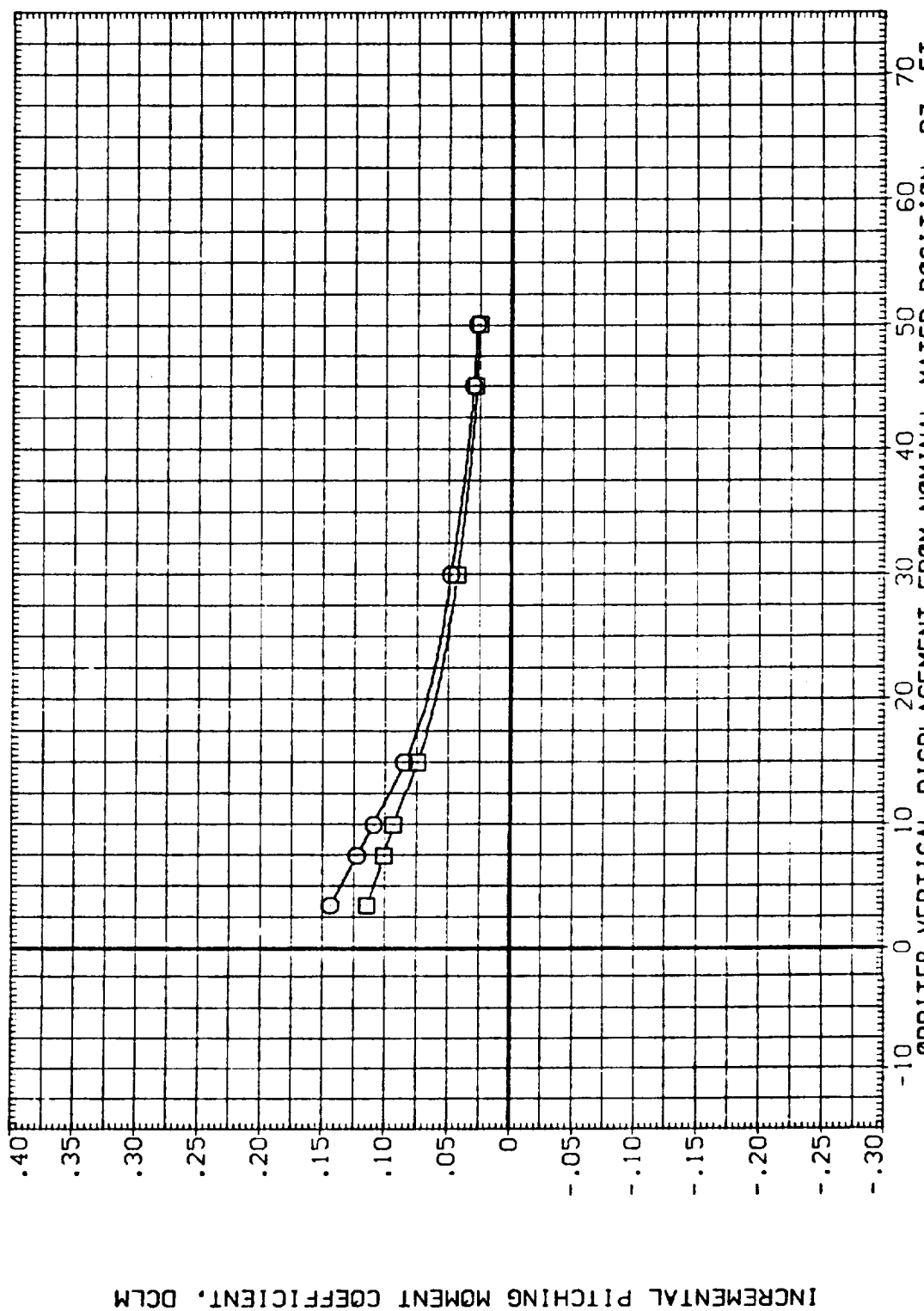


FIG. 44 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 8.0 DEG)

(A)ALPHAC= 2.00

DATA SET SYMBOL  
(PNHY27)  
(PNHY33)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)

DY  
0.000  
10.000

ELEVON  
0.000  
0.000

IORB  
8.000  
8.000

MACH  
0.600  
0.600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP 0.0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

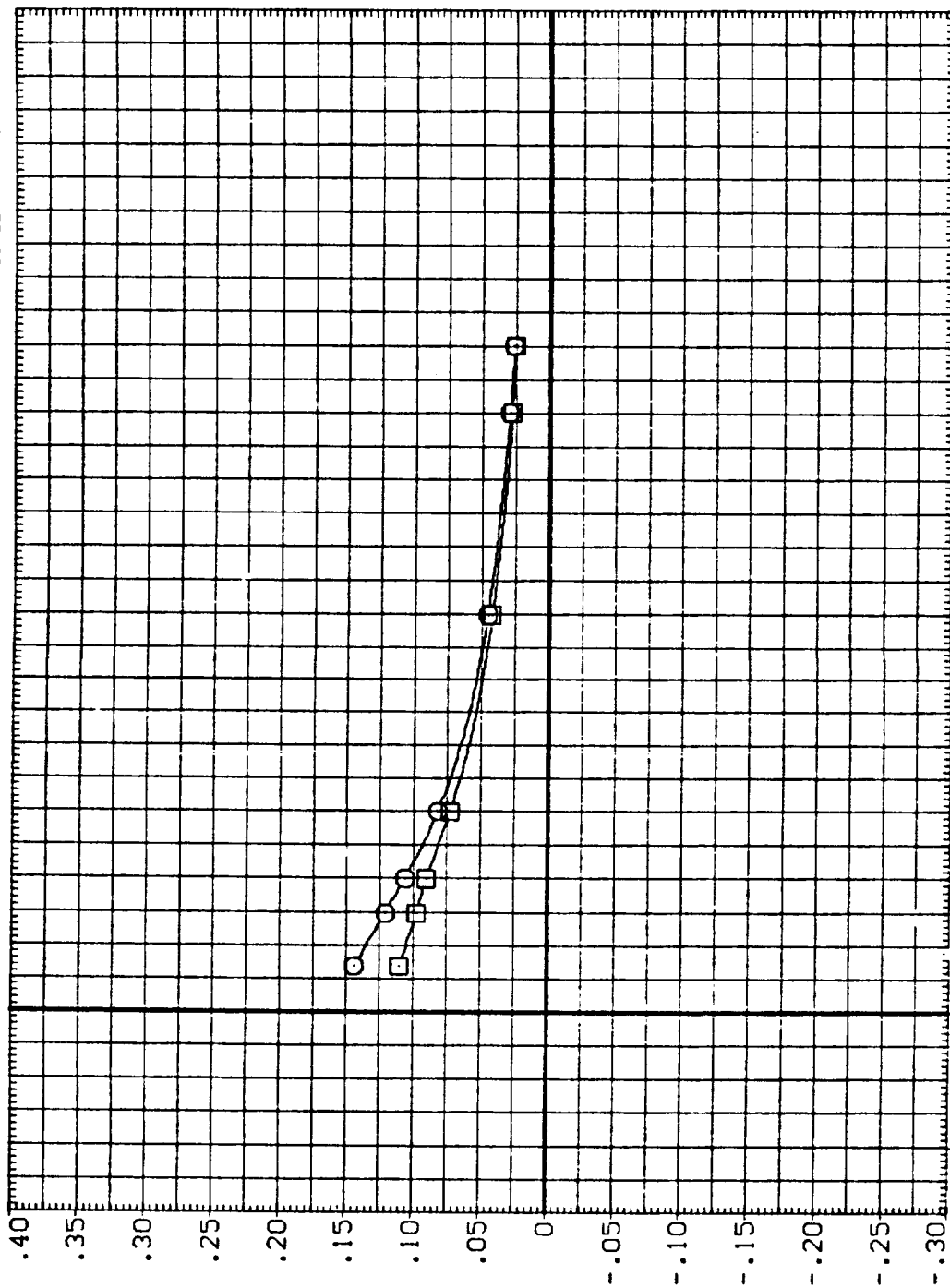


FIG. 44 EFFECT OF ORBITER DY ON CARRIER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
(B)ALPHAC= 4.00

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNH27)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	.000	.000	8.000	.600	SREF 2690.0000 SO.FT.
(VNH33)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	10.000	.000	8.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

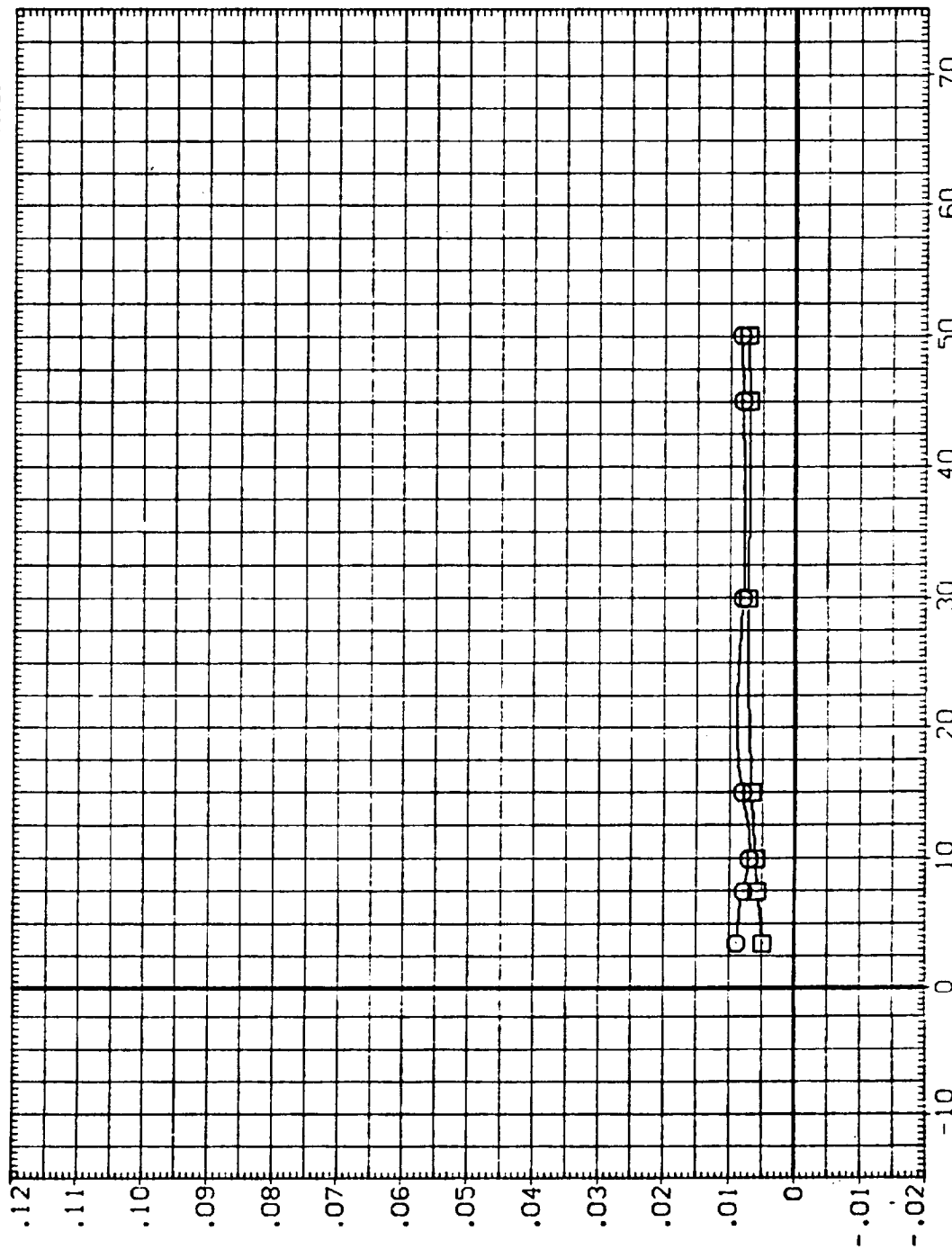


FIG. 45 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)

(A) ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNH27)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	.000	.000	8.000	.600	SREF 2690.0000 50.FT.
(VNH33)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	10.000	.000	8.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

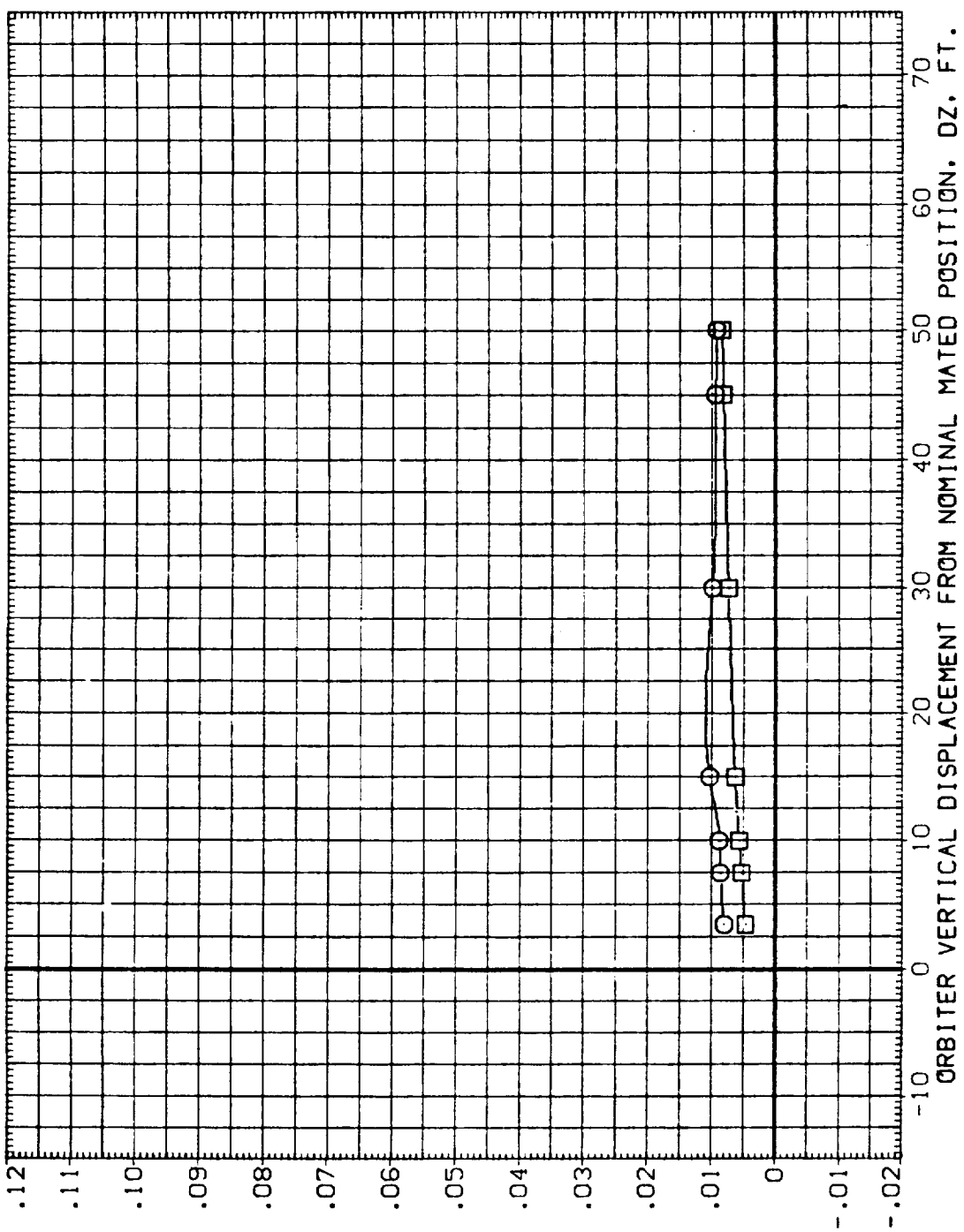
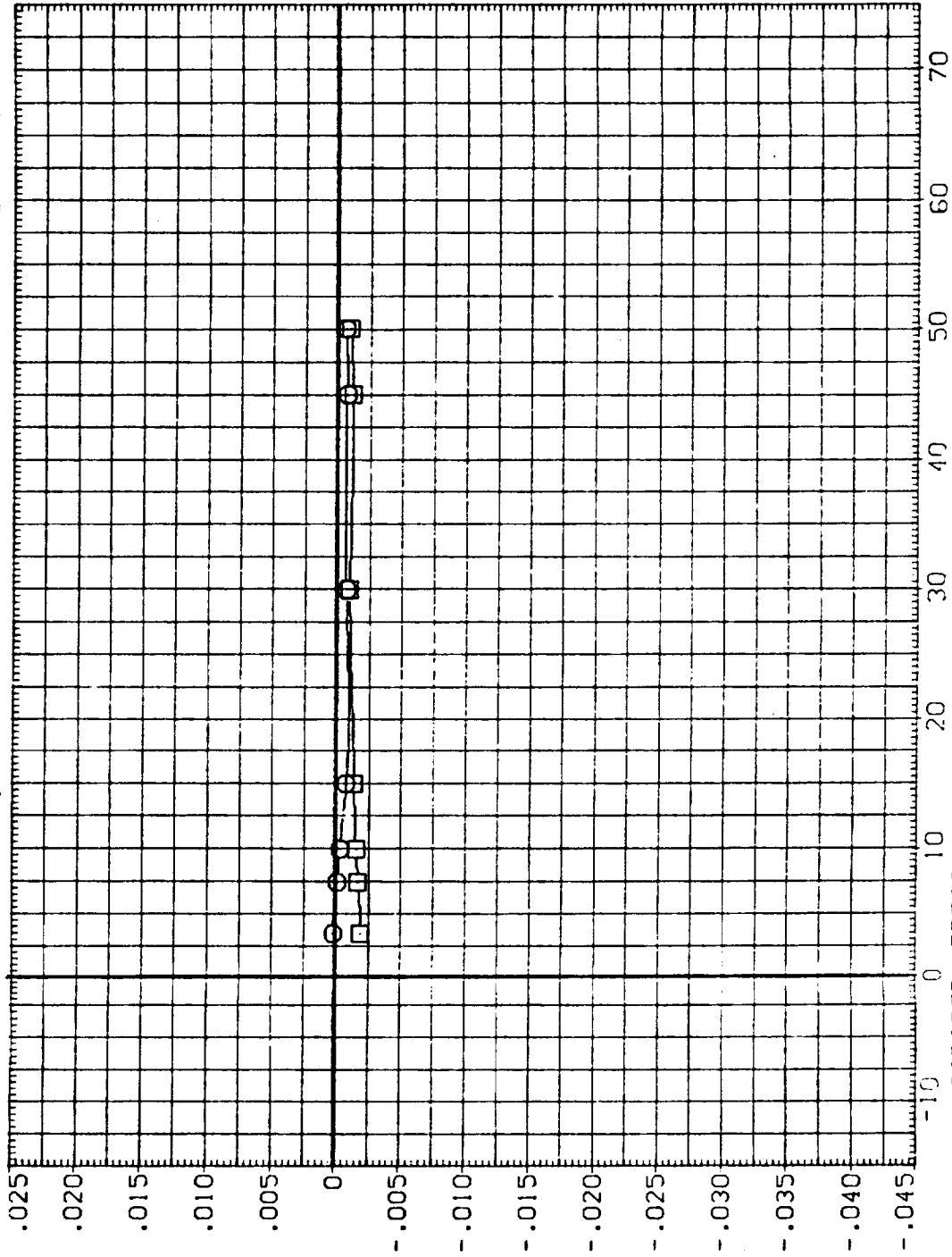


FIG. 45 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
 (B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNHV27)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	.000	.000	8.000	.600	SREF 2690.0000 SQ.FT.
(VNHV33)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	10.000	.000	8.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 45 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)

(A) ALPHAC= 2.00

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DATA SET SYMBOL    CONFIGURATION DESCRIPTION    QY    ELEVON    IORB    MACH    REFERENCE INFORMATION

(VNHV27)	ARC 14-120(CA23B)	747/1 AT1 Q351 (ORBITER DATA)	.000	.000	.600	SREF 2690.0000 SQ.FT.
(VNHV33)	ARC 14-120(CA23B)	747/1 AT1 Q351 (ORBITER DATA)	10.000	.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

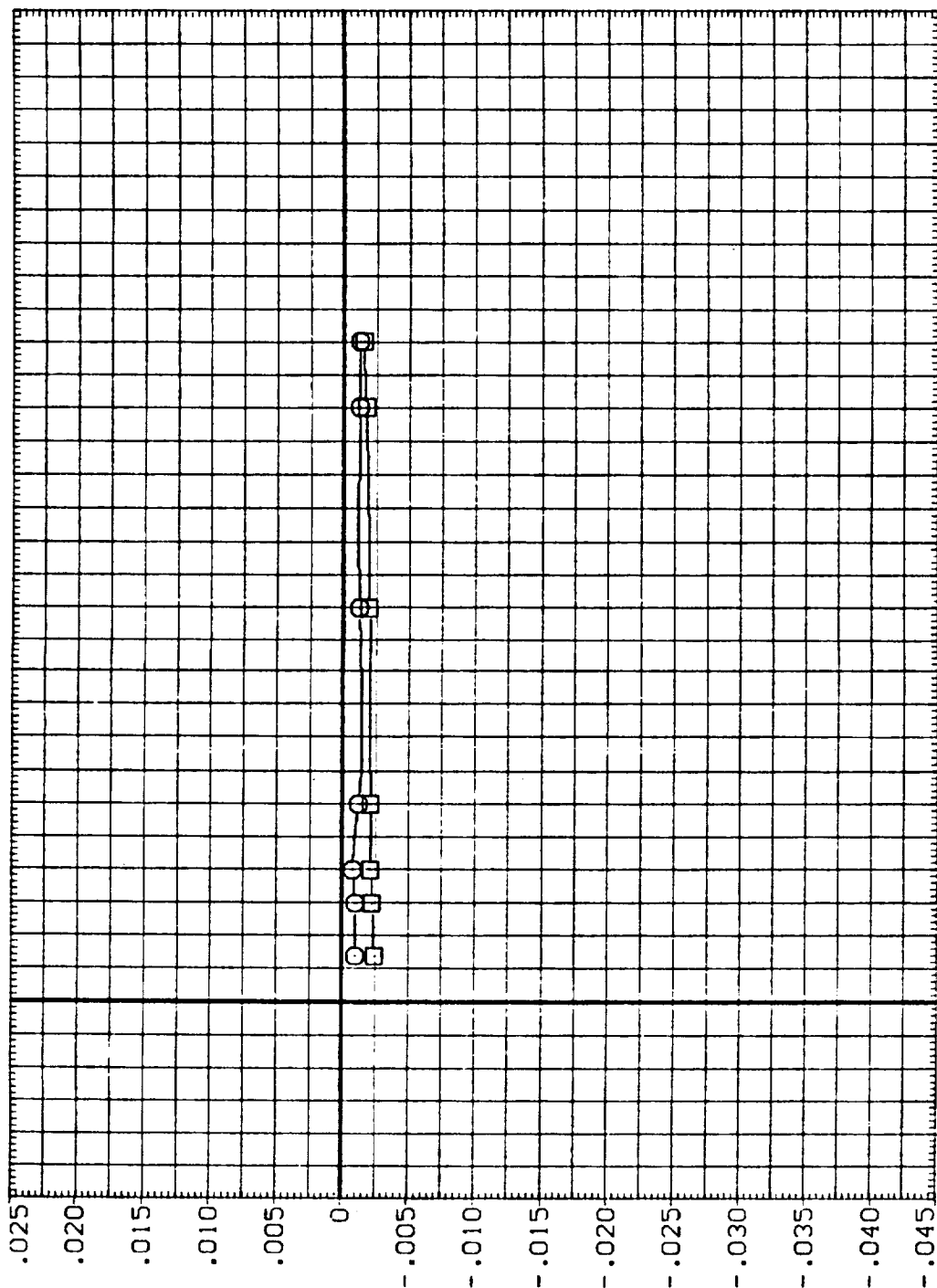


FIG. 45 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB 1/C ON, IORB= 8.0 DEG)  
(B)ALPHAC= 4.00

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(VNH27)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	.000	.000	8.000	.600	SREF 2690.0000 SQ.FT.
(VNH33)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	10.000	.000	8.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP .0000 IN. Z0
						SCALE .0125

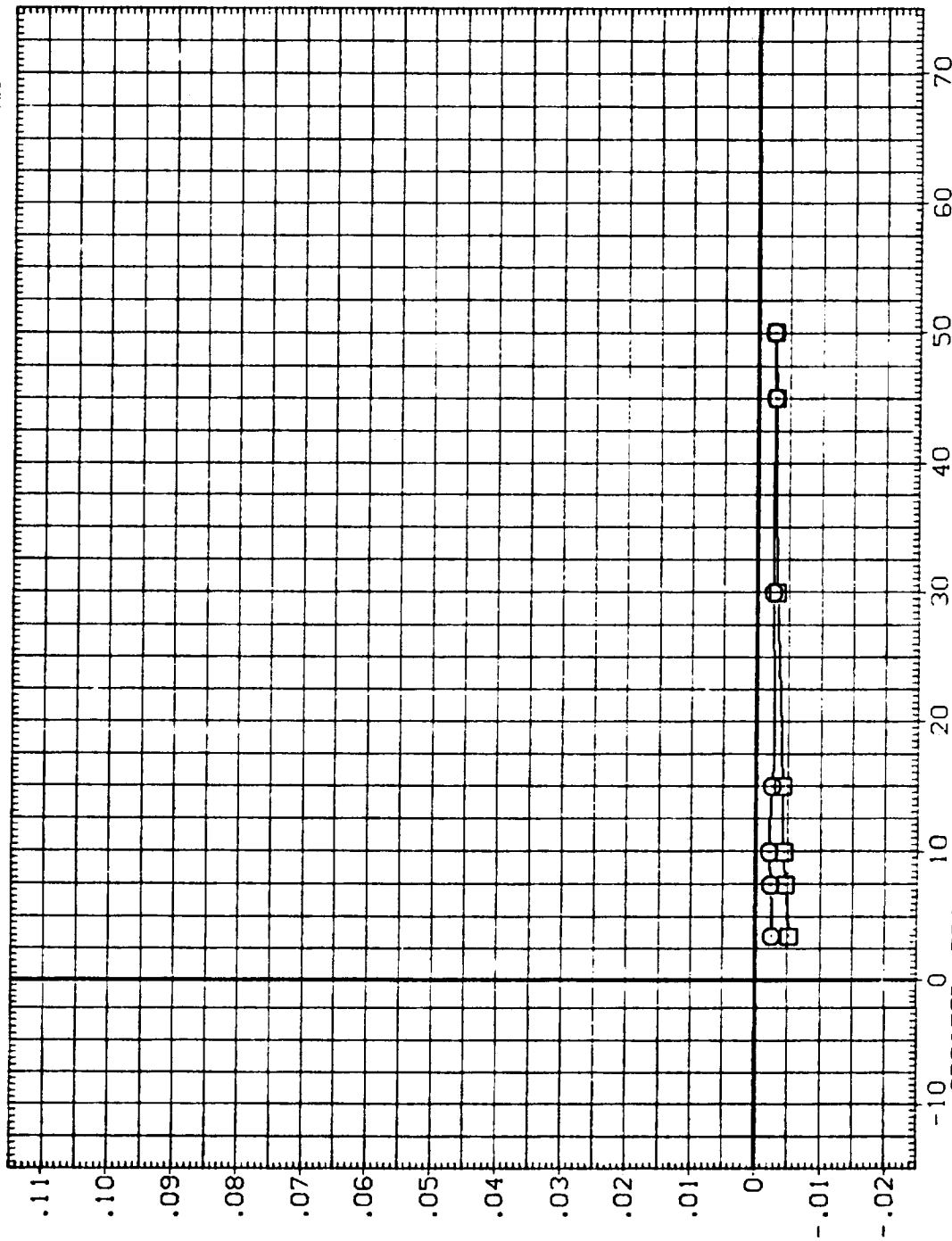


FIG. 45 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., IORB= 8.0 DEG)

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (VNHY27)    ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITTER DATA)  
 (VNHY33)    ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITTER DATA)

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XHRP 1109.0000 IN. X0  
 YHRP .0000 IN. Y0  
 ZHRP 375.0000 IN. Z0  
 SCALE .0125

DY    ELEVON    IORB    MACH  
 .000    .000    8.000    .600  
 10.000    .000    8.000    .600

ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)

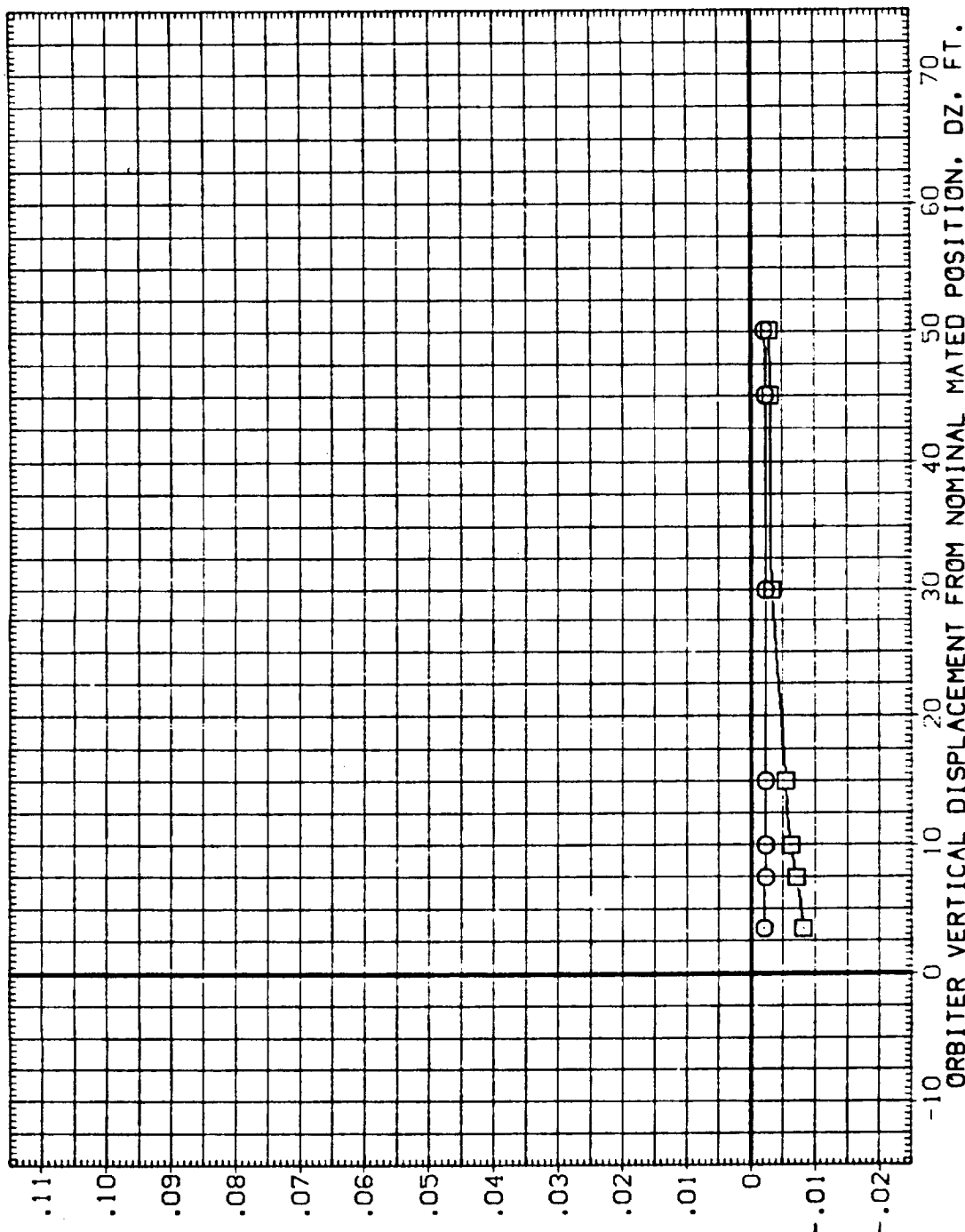


FIG. 45 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 8.0 DEG)  
 (B)ALPHAC= 4.00    PAGE 366



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DY	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NHV27)	ARC 14-120(CA238) 747/1 AT1	.000	.000	8.000	.600	SREF 2690.0000 SQ.FT.
(4NHV33)	ARC 14-120(CA238) 747/1 AT1	10.000	.000	8.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						YMRP 1109.0000 IN. X0
						ZMRP .0000 IN. Y0
						SCALE .0125

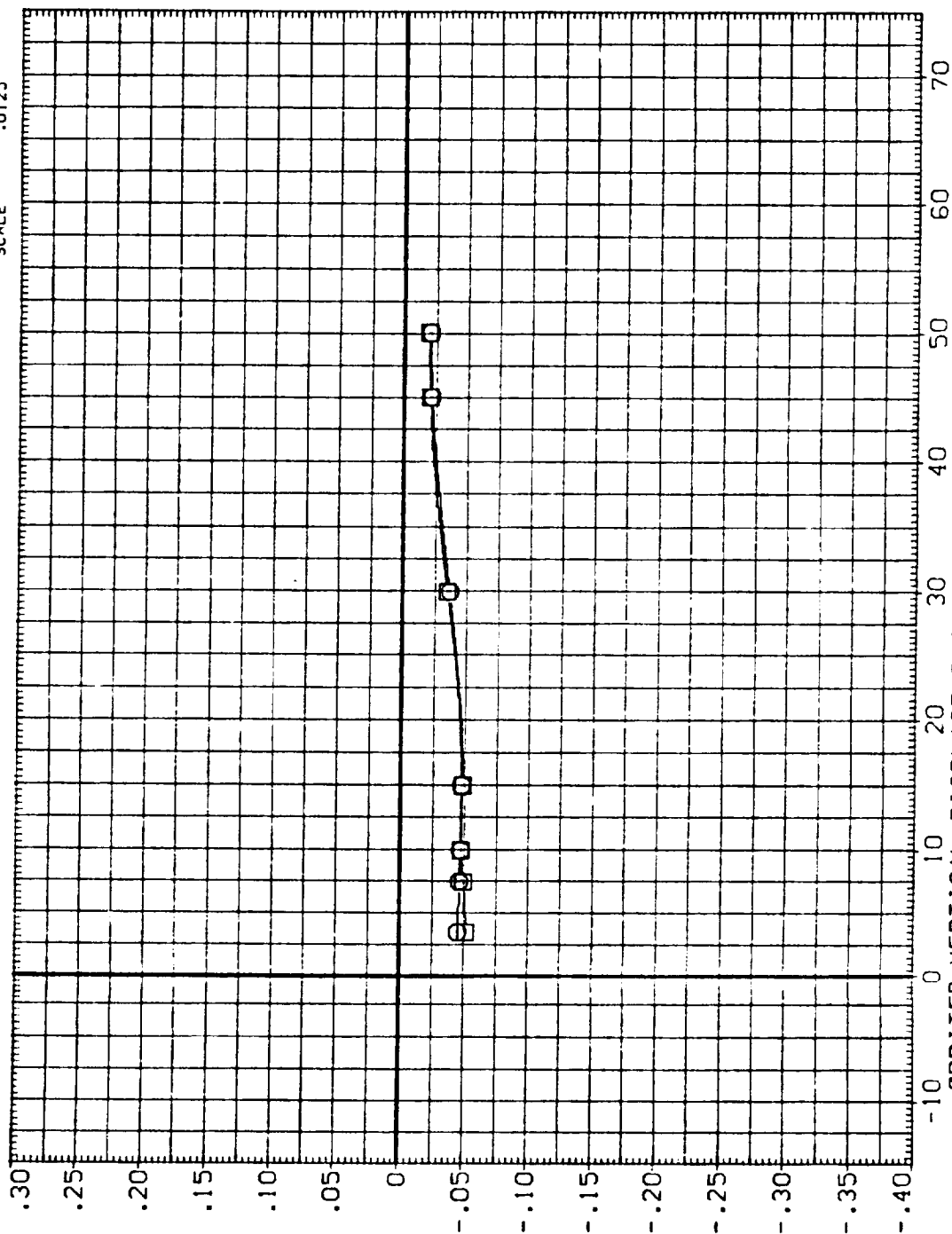


FIG. 45 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)

(A)ALPHAC= 2.00

DATA SET SYMBOL (4NHV27) (4NHV33) CONFIGURATION DESCRIPTION ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA) ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA) DY .000 ELEVON .000 ORB 8.000 MACH .600 REFERENCE INFORMATION SREF 2690.0000 SQ.FT. LREF 474.8100 IN. BREF 936.6800 IN. XHRP 1109.0000 IN. Y0 ZMRP 375.0000 IN. Y0 SCALE .0125

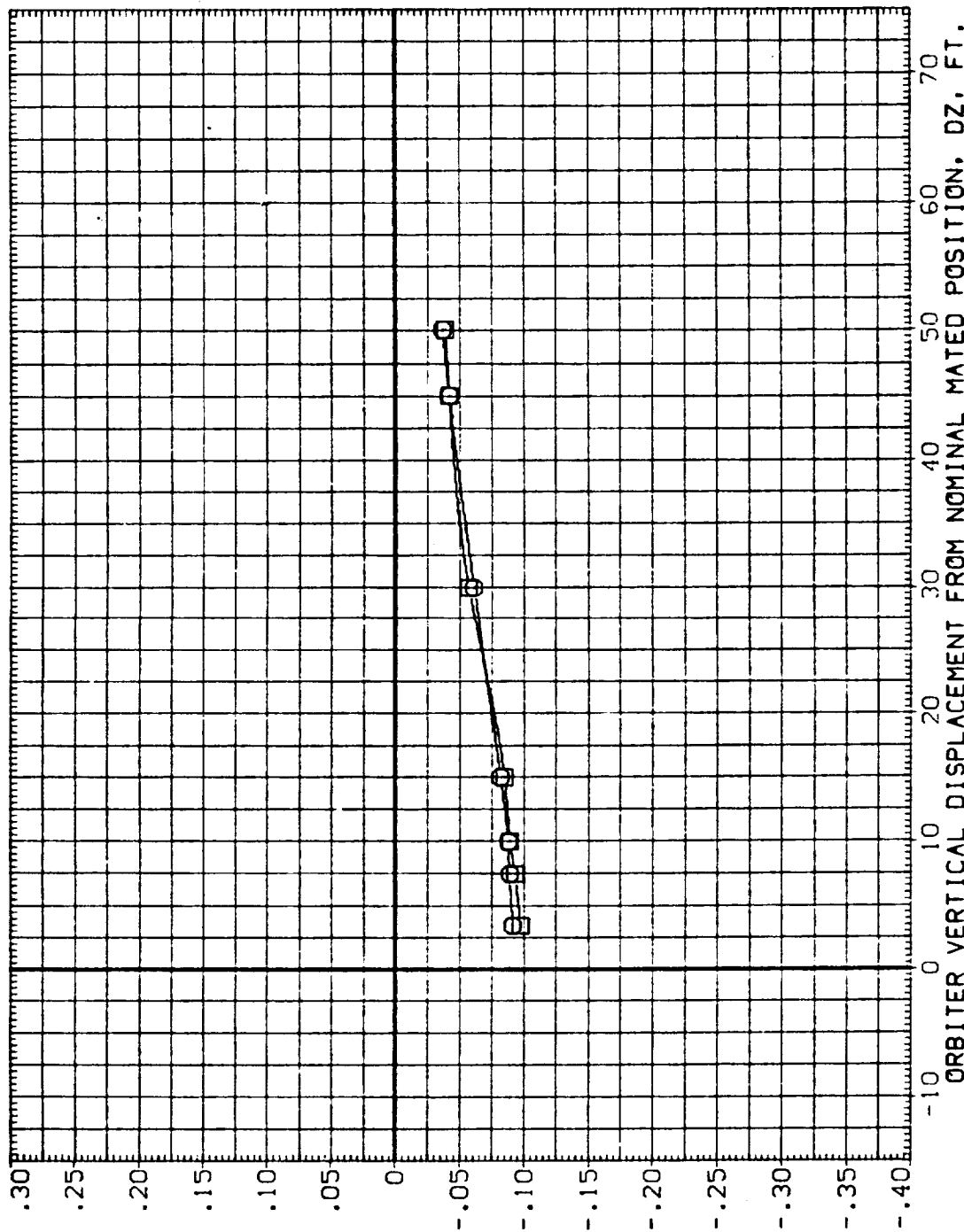


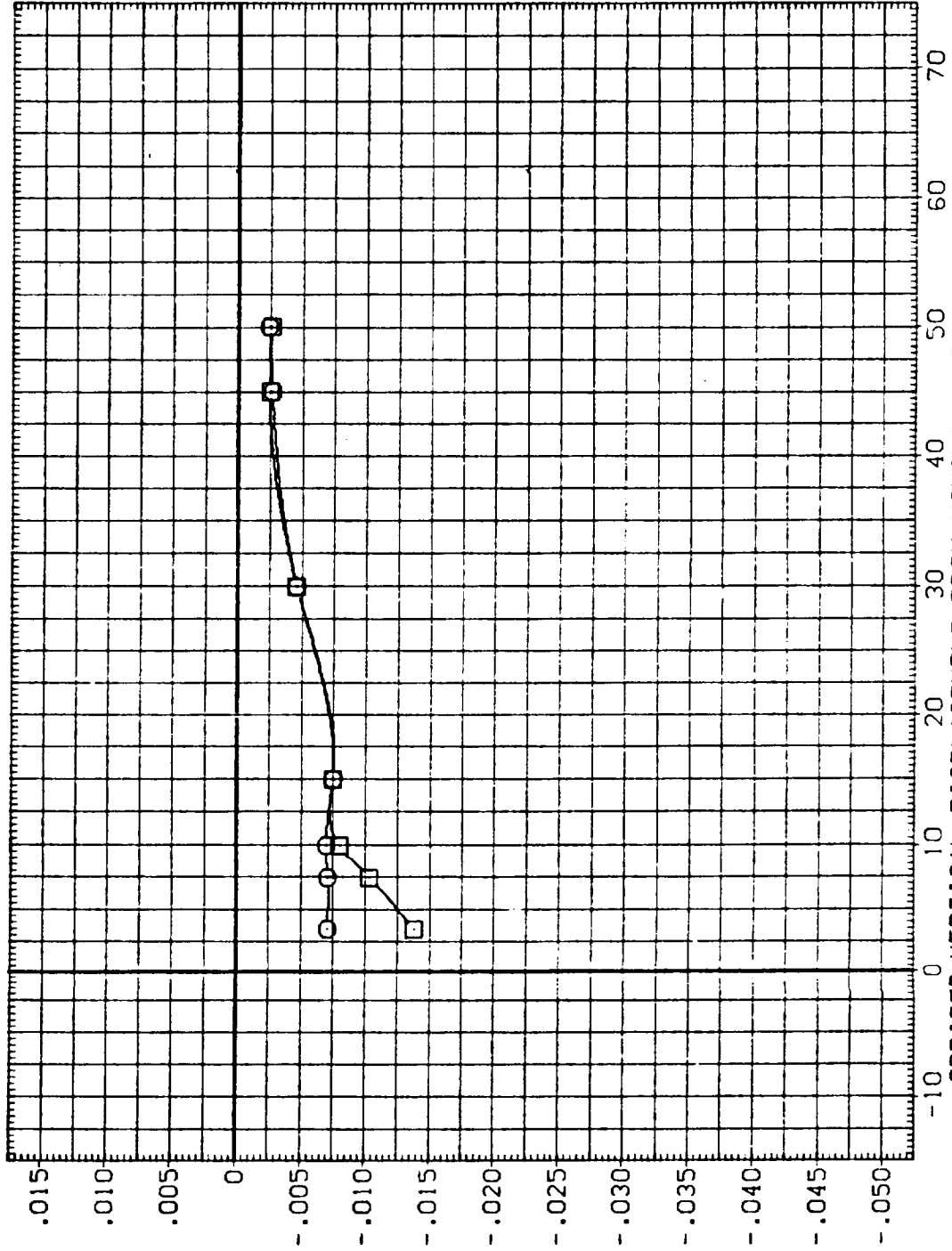


FIG. 45 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, ORB= 8.0 DEG) (B)ALPHAC= 4.00 PAGE 368

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NHV27)  ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
 (4NHV33)  ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)

DY .000  
 10.000  
 ELEVON .000  
 .000  
 IORB 8.000  
 8.000  
 MACH .600  
 .600  
 REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.8800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125



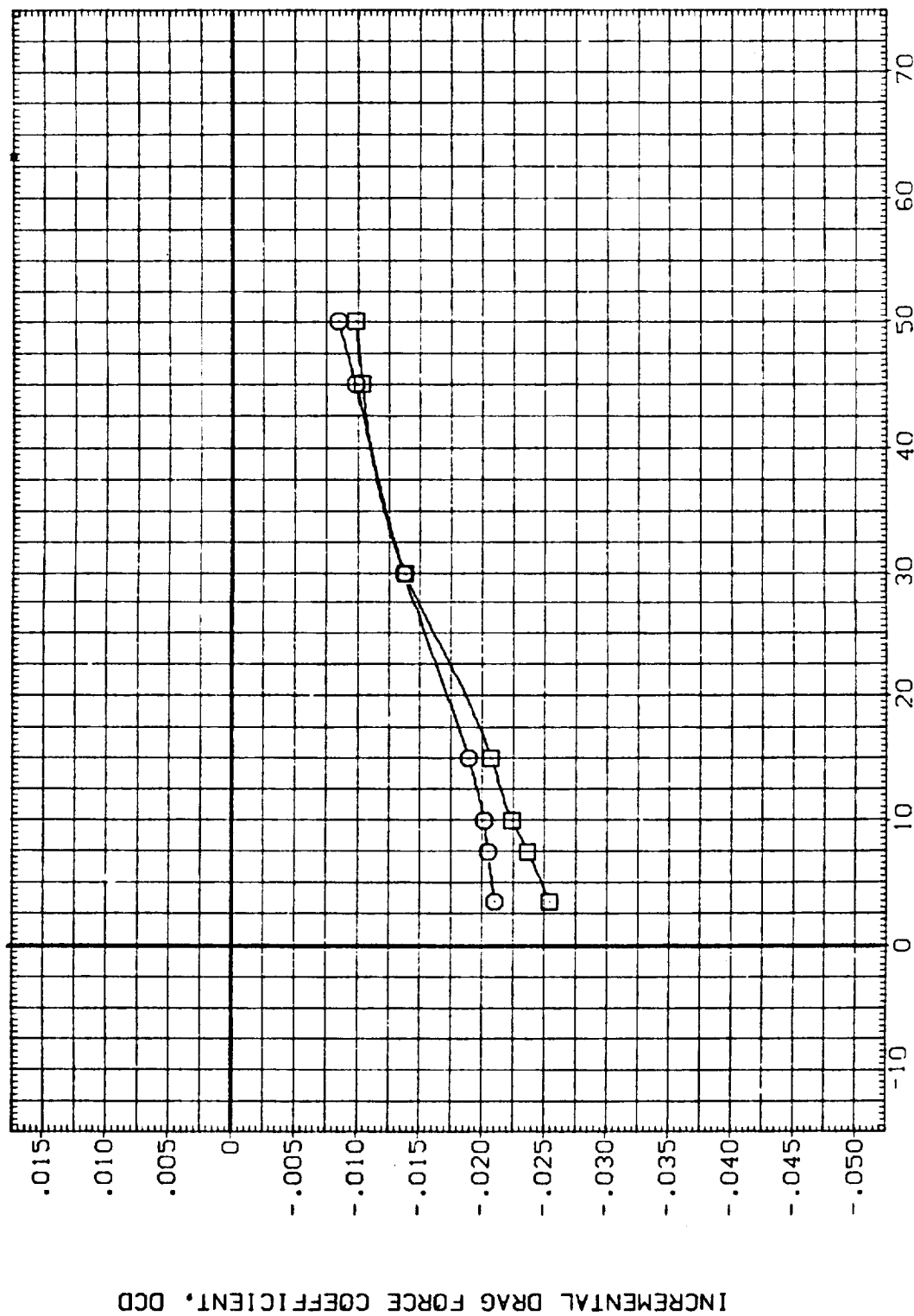
INCREMENTAL DRAG FORCE COEFFICIENT, DCD

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 45 EFFECT OF ORBITER DY ON ORBITER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)

(A) ALPHAC= 2.00

REFERENCE INFORMATION	
	SQ.FT.
SREF	2690.0000
LREF	474.8100
BREF	936.6800
XMRP	1109.0000
YMRP	.0000
ZMRP	375.0000
SCALE	.0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION. DZ. FT.

FIG. 45 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 8.0 DEG)

(B)ALPHAC= 4.00 PAGE 370

REFERENCE INFORMATION	
SREF	2690.0000 50. FT.
LREF	474.8100 IN.
BREF	935.6800 IN. X0
XMRP	1109.0000 IN. Y0
YMRP	.0000 IN. Z0
ZMRP	375.0000 IN. Z0
SCALE	.0125

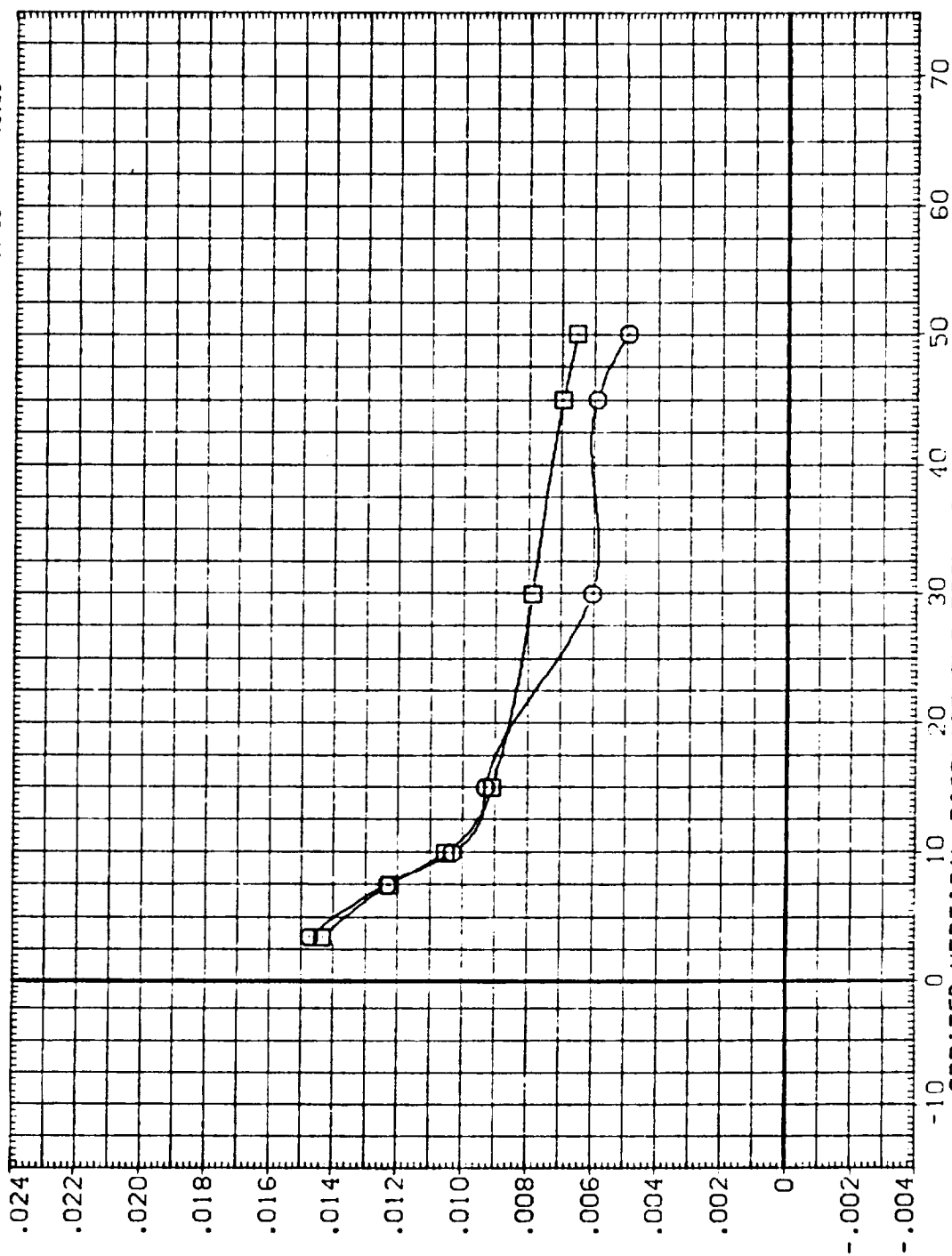


FIG. 45 EFFECT OF ORBITER DY ON ORBITER(STAB= 5.0 DEG.,ORB T/C ON,IORB= 8.0 DEG)

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (4NHV27)    ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)  
 (4NHV33)    ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)

REFERENCE INFORMATION  
 SREF 2690.0000 50. FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP 375.0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

DY    ELEVON    IORB    MACH  
 .000    .000    8.000    .600  
 10.000    .000    8.000    .600

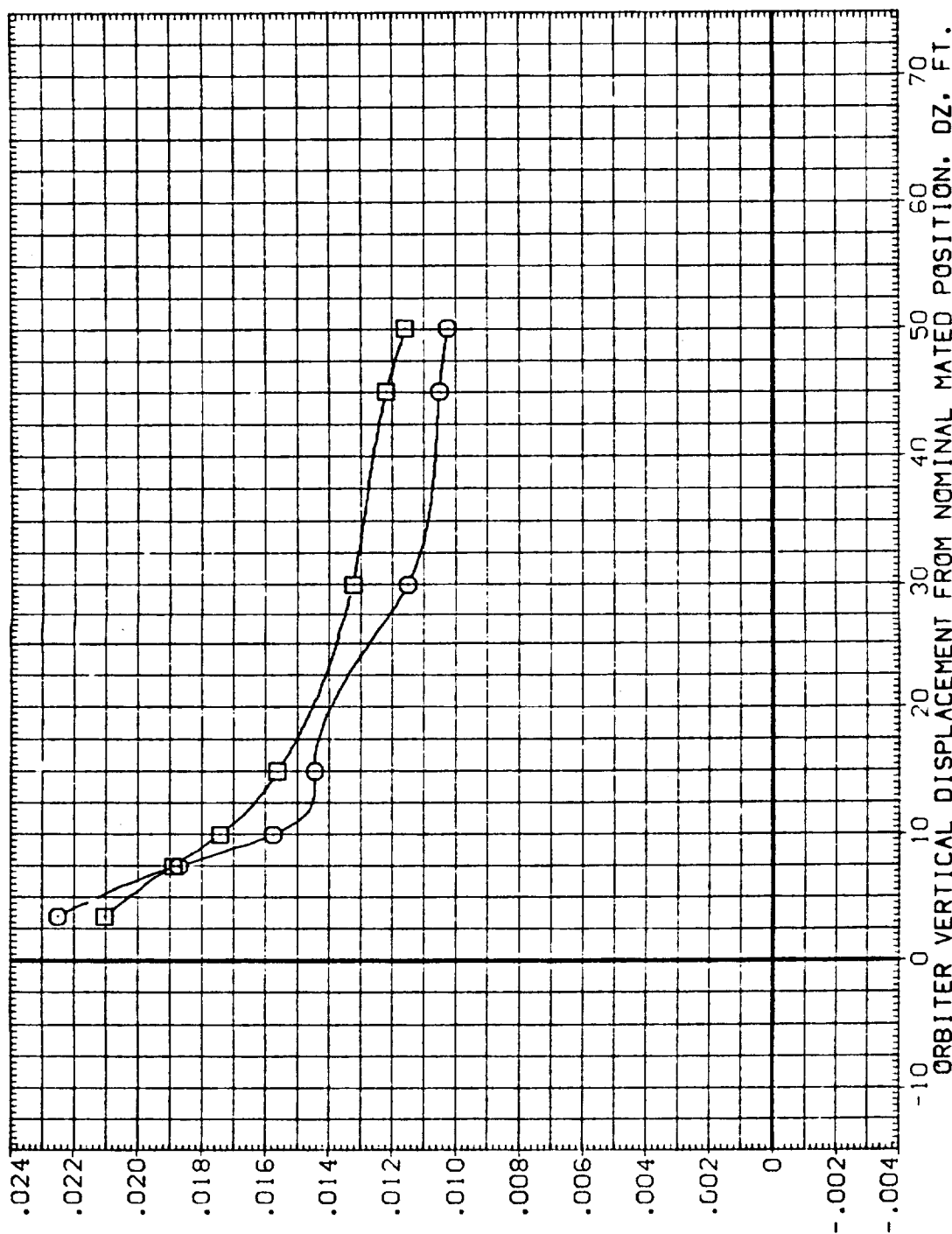


FIG. 45 EFFECT OF ORBITTER DY ON ORBITTER (STAB= 5.0 DEG., ORB T/C ON, IORB= 8.0 DEG)  
 (B) ALPHAC= 4.00    PAGE 372

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN.
XHRP	1339.5000 IN. XC
YHRP	.0000 IN. YC
ZHRP	190.7500 IN. ZC
SCALE	.0125

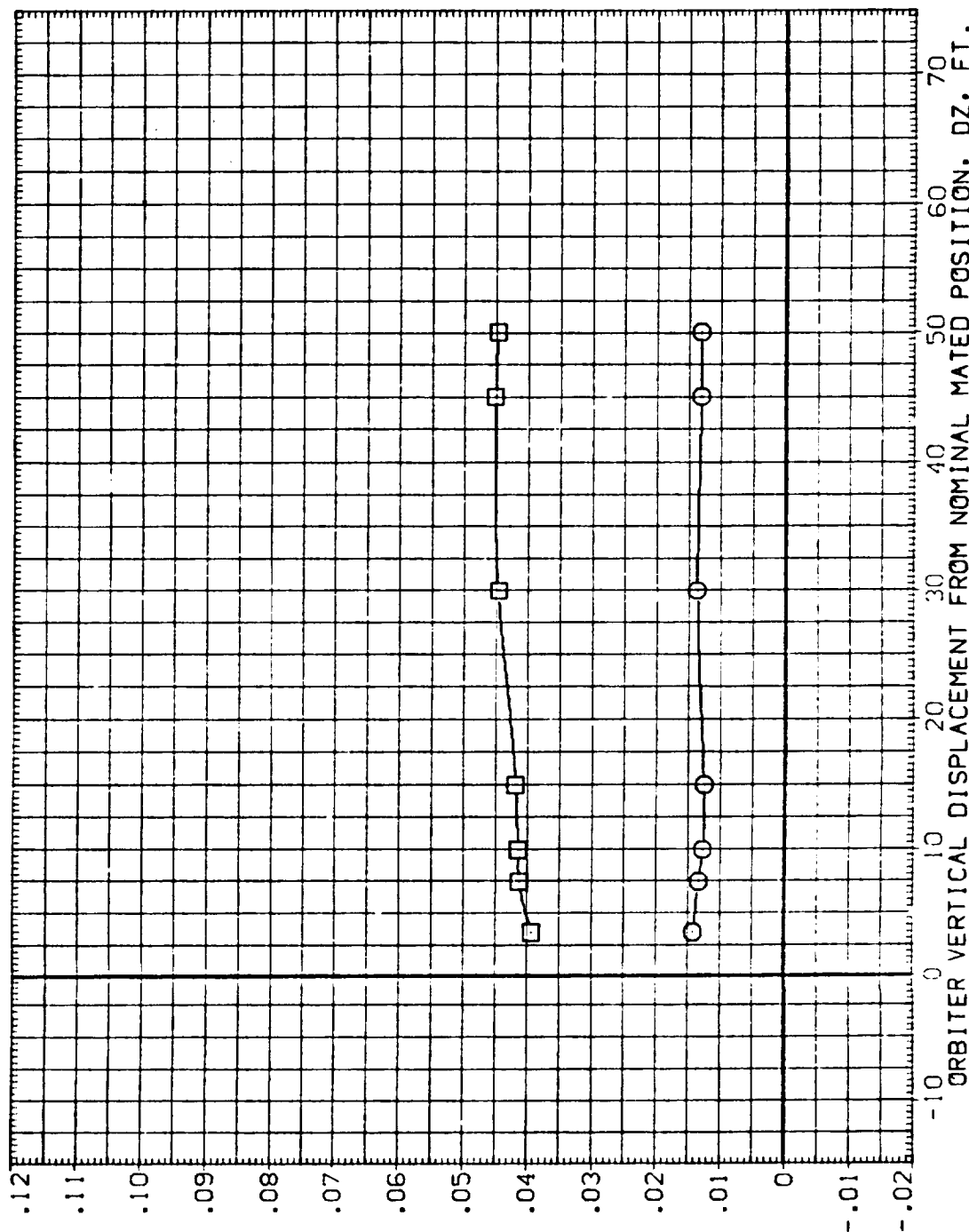


FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(A)ALPHAC= 2.00

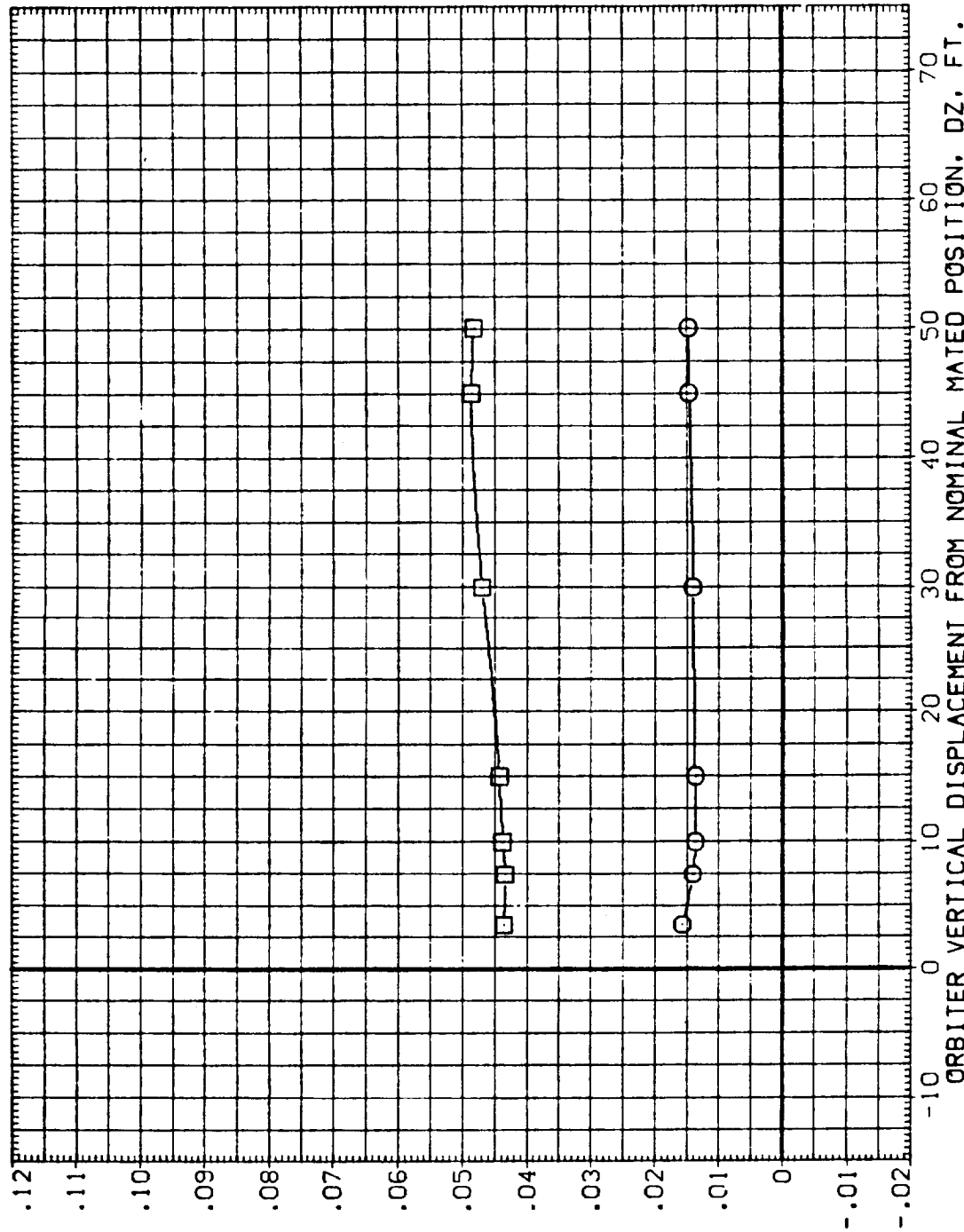
SIDE FORCE COEFFICIENT, CY

DATA SET SYMBOL (JNH034)  
(JNH036)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

RUDDER ELEVON 10RB MACH  
.000 .000  
10.000 .600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(JNH034)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 50. FT.
(JNH036)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0125

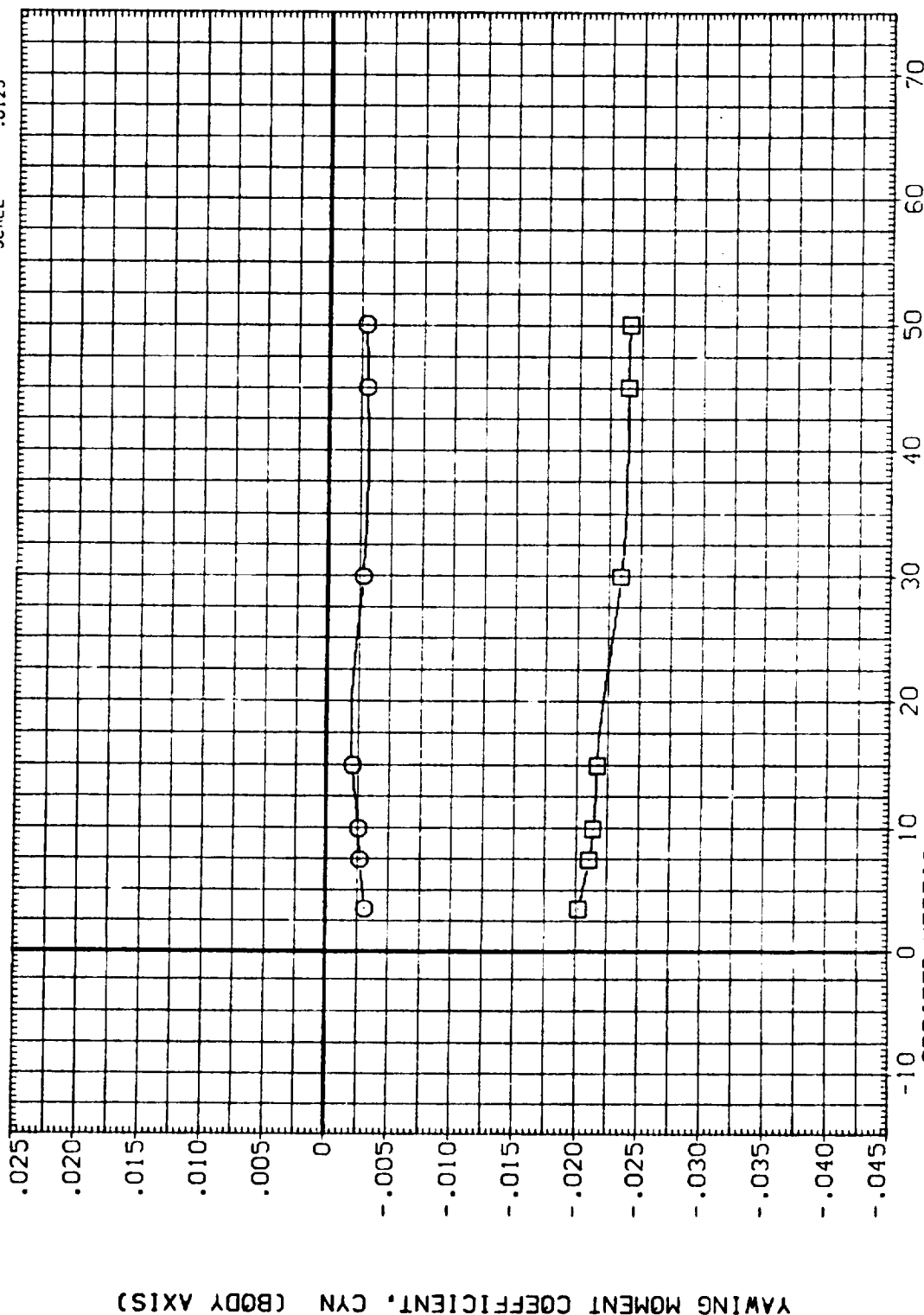


FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(A)ALPHAC= 2.00

DATA SET SYMBOL (JNH034) (JNH036)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
 ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

RUDDER ELEVON 10R 10R  
 .000 .000  
 .000 .000

MACH .600 .500

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP 190.7500 IN. YC  
 ZMRP .0125 IN. ZC

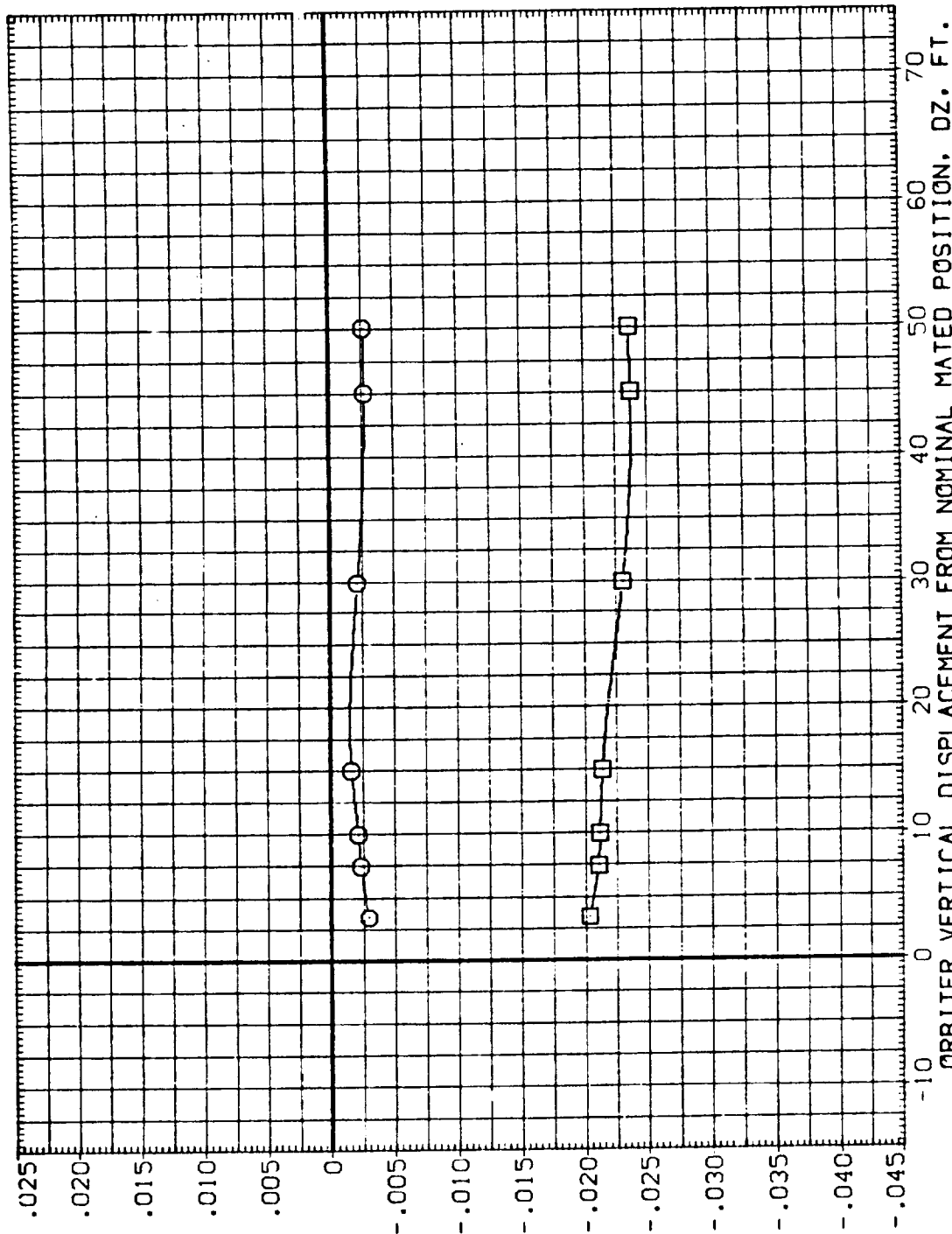
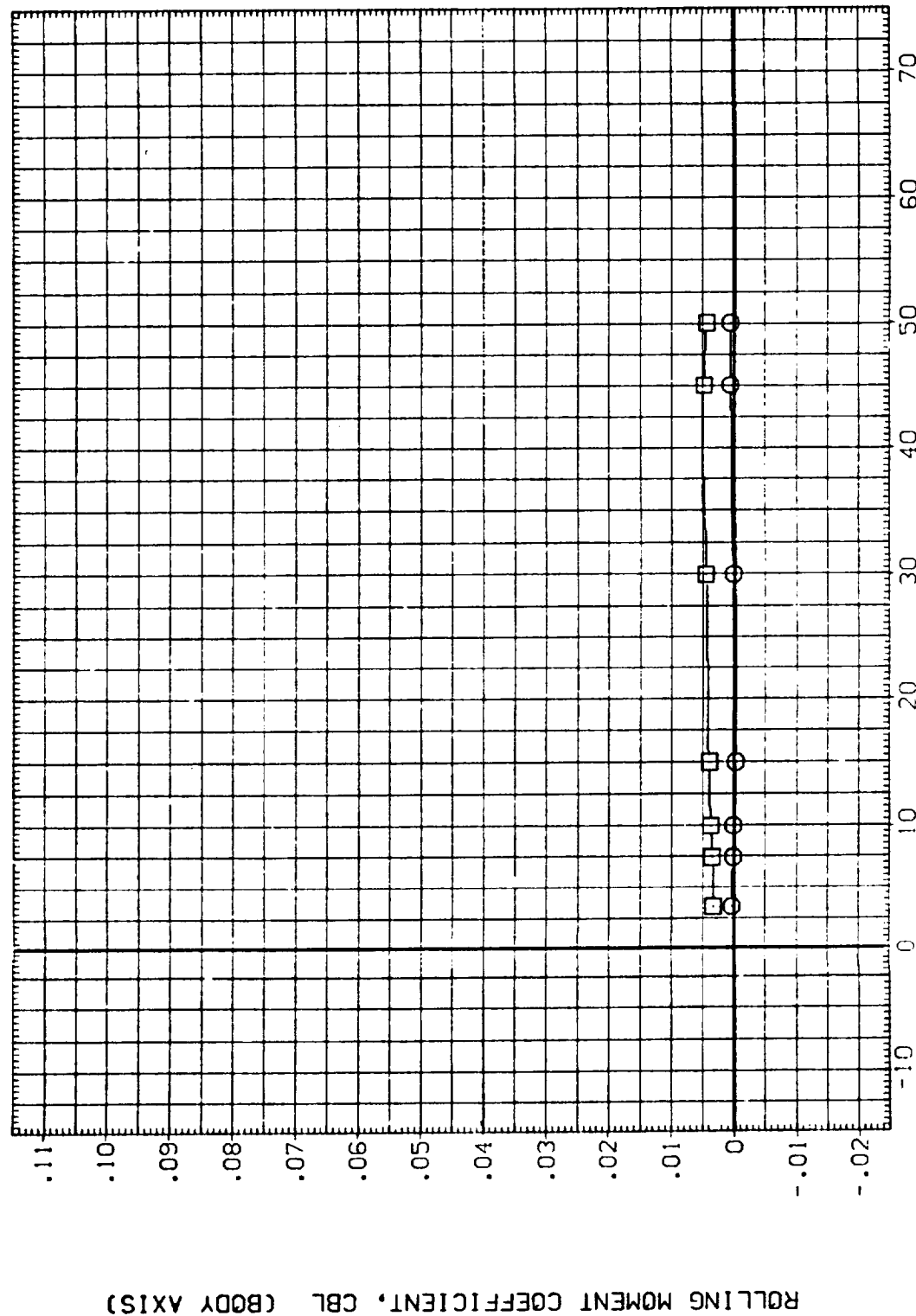


FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IOPB	MACH	REFERENCE INFORMATION
(JNH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 SQ.FT.
(JNH036)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						YMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)

DATA SET SYMBOL (JNH034) (JNH036)

CONFIGURATION DESCRIPTION ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)

RUDDER ELEVON 0.000 10.000

REFERENCE INFORMATION SREF 5500.0000 SQ.FT. LREF 327.7800 IN. BREF 2348.0400 IN. XC XMRP 1339.9000 IN. YC YMRP .0000 IN. ZC ZMRP 190.7500 IN. SCALE .0125

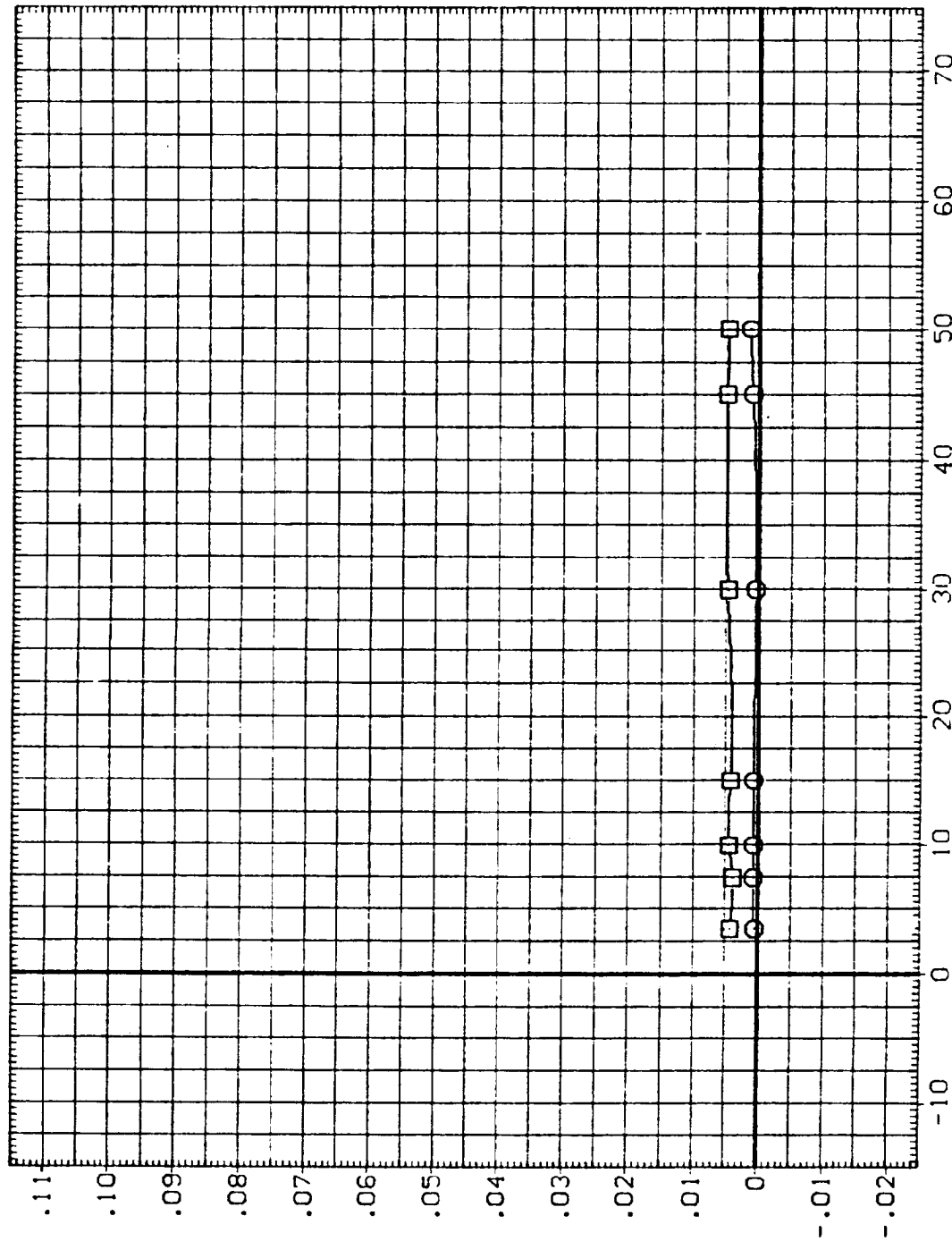



FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB 1/C ON)

(B)ALPHAC= 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(PNH234)  (PNH036)

ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)

RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
.000	.000	.600	SREF	5500.0000 SQ. FT.
10.000	.000	.600	LREF	327.7800 IN.
			BREF	2348.0400 IN.
			XMRP	1339.9000 IN. XC
			YMRP	.0000 IN. YC
			ZMRP	190.7500 IN. ZC
			SCALE	.0125

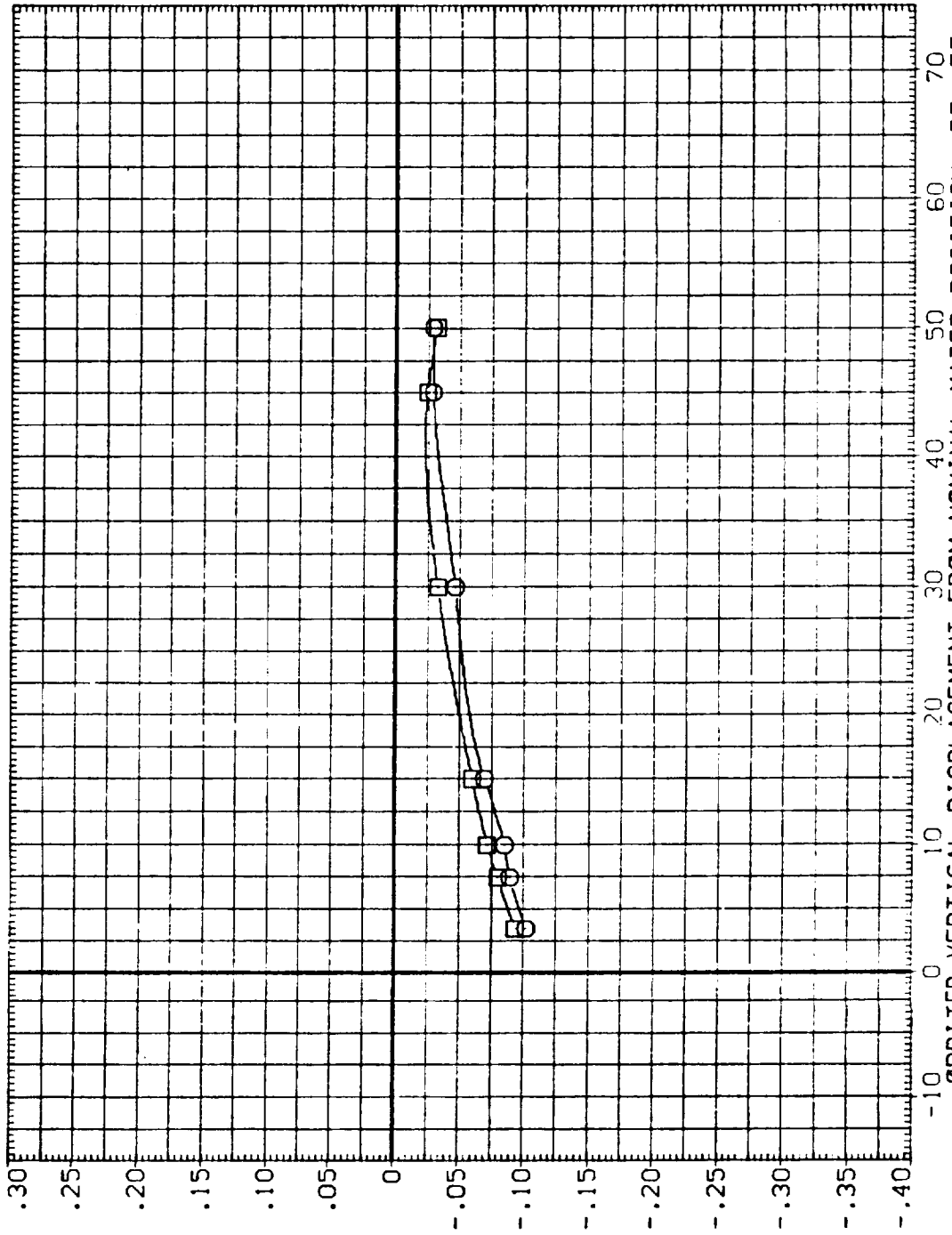


FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (PNHZ34)    ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
 (PNHQ36)    ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)

RUDDER    ELEVON    IORB    MACH  
 .000    .000    6.000    .600  
 10.000    .000    6.000    .600

REFERENCE INFORMATION  
 SREF    5500.0000    50.FT.  
 LREF    327.7800    IN.  
 BREF    2348.0400    IN.  
 YMRP    1339.9000    IN. XC  
 YMRP    190.7500    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0125

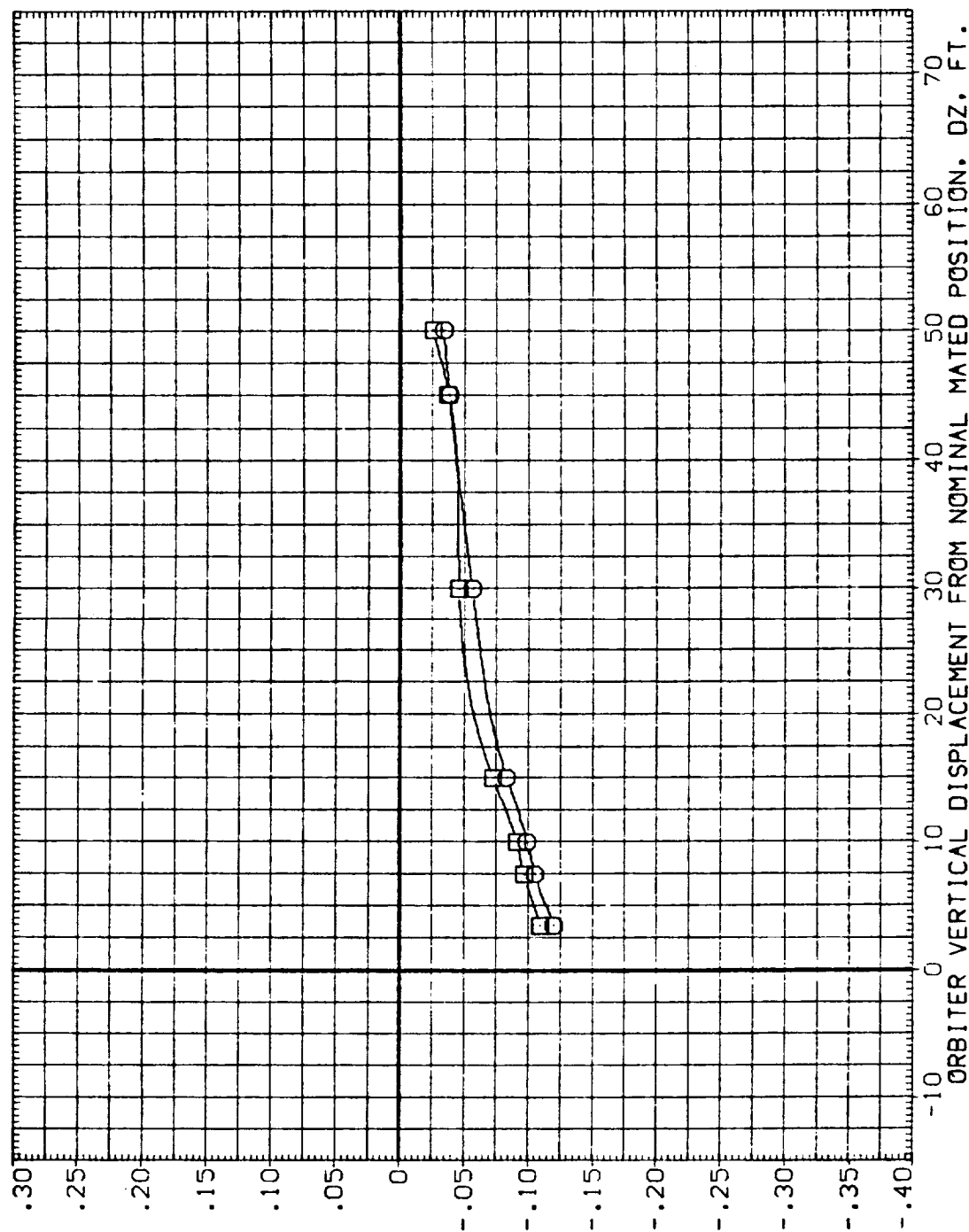
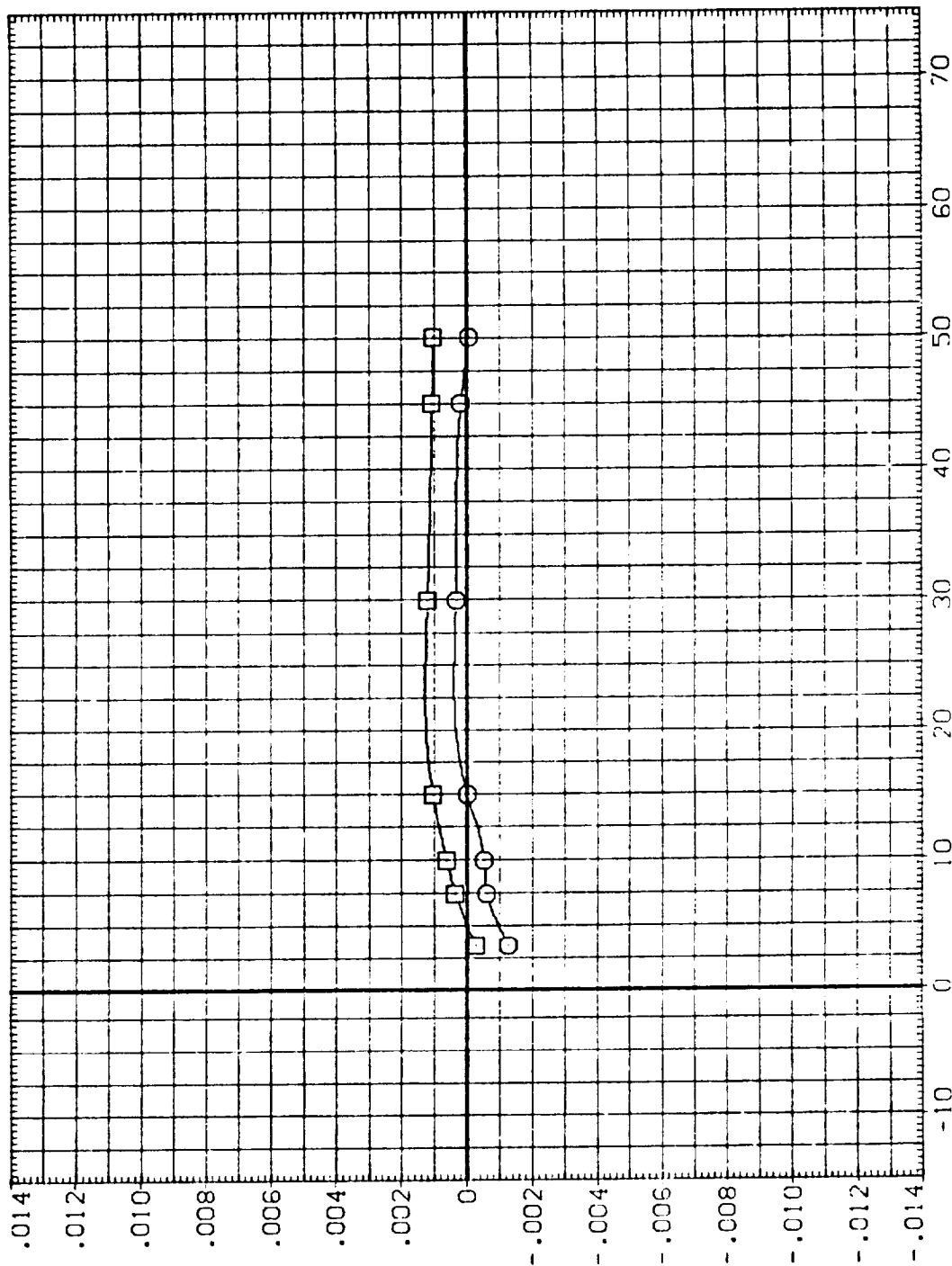


FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
 (B)ALPHAC= 4.00    PAGE 380

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	10RB	MACH	REFERENCE INFORMATION
(PNH234)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	.000	.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNH036)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	10.000	.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XHRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN ZC
						SCALE .0125



INCREMENTAL DRAG FORCE COEFFICIENT, DCD

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

DATA SET SYMBOL (PNH234)  
(PNH036)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)

RUDDER ELEVON 13RB MACH  
.000 .600  
10.000 .600

REFERENCE INFORMATION  
SREF 5500.0000 50.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

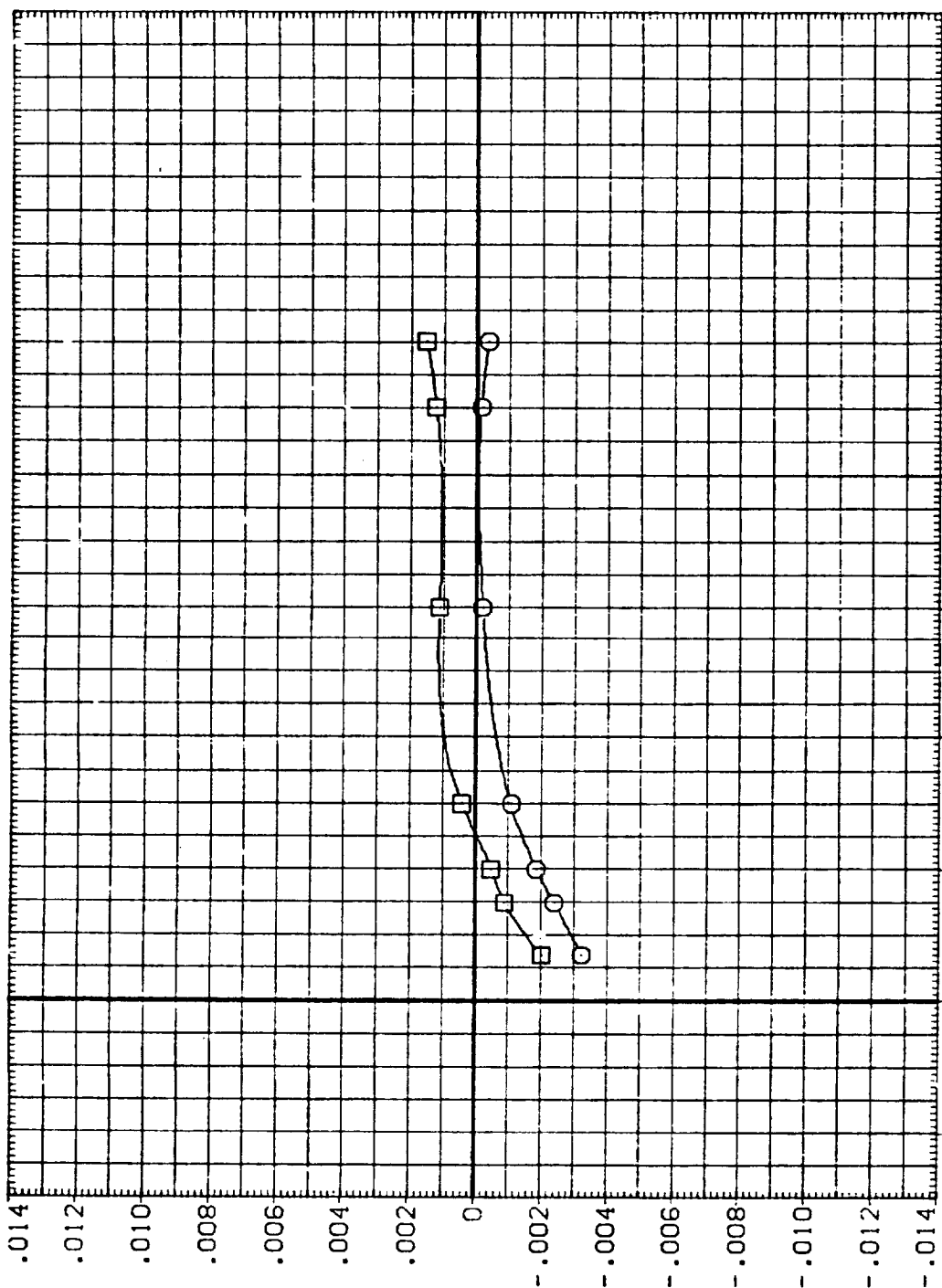


FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(B)ALPHAC= 4.00





RUDDER  
10.000  
.000

ELEVEN  
000  
000

10RB  
6.000  
6.000

4ACH	.600
	.600

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN.
XMRP	1339.9000 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0125

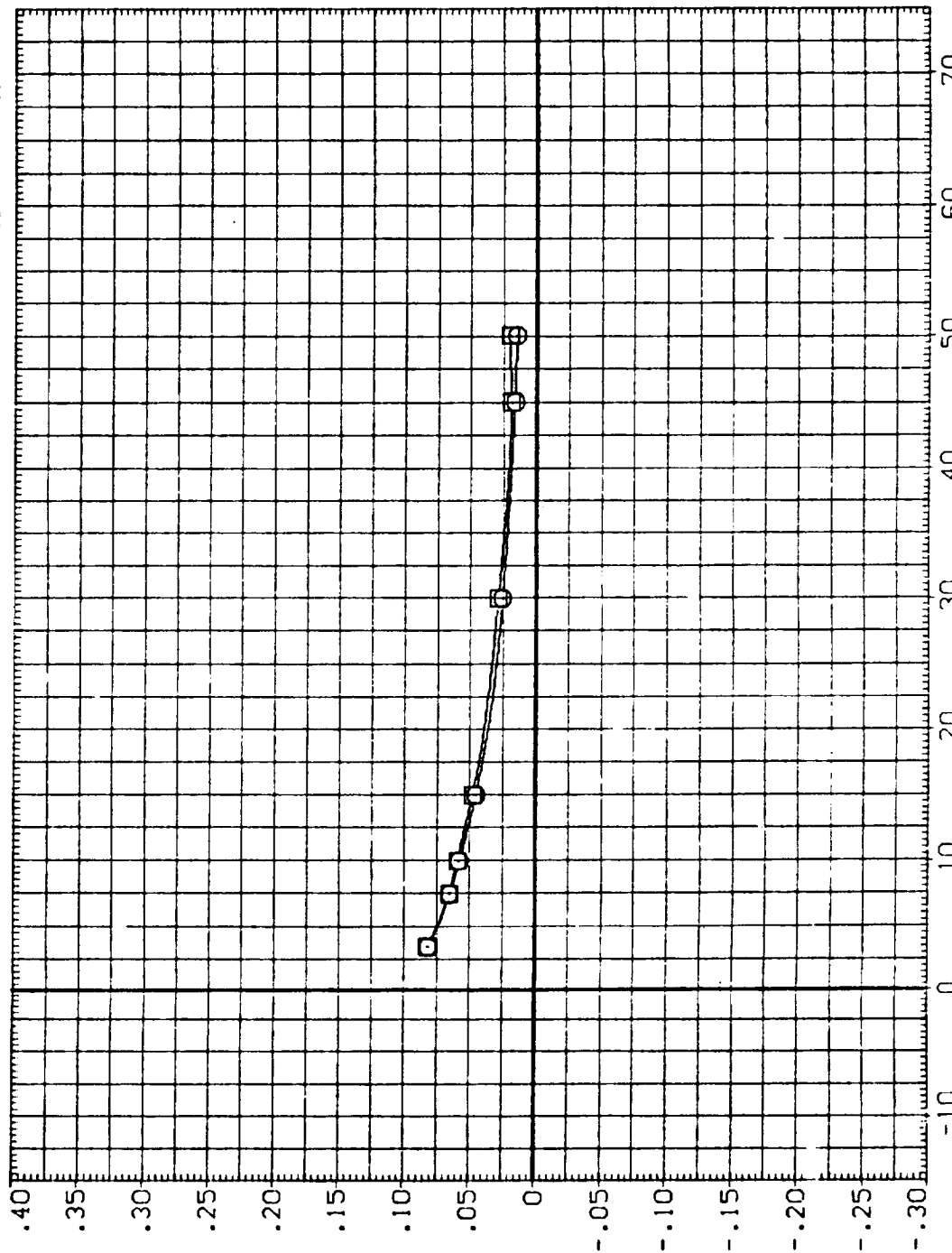


FIG. 46 EFFECT OF CARRIER RUDDER ON CARRIER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

[ A ]ALPHAC= 2.00

DATA SET SYMBOL (PNH234)  
(PNH036)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 Q3S1 (CARRIER DATA)  
ARC 14-120(CA239) 747/1 AT1 Q3S1 (CARRIER DATA)

RUDDER ELEVON 10RB 6.000 6.000

MACH .600 .600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN.  
YMRP .0000 IN.  
ZMRP 190.7500 IN.  
SCALE .0125

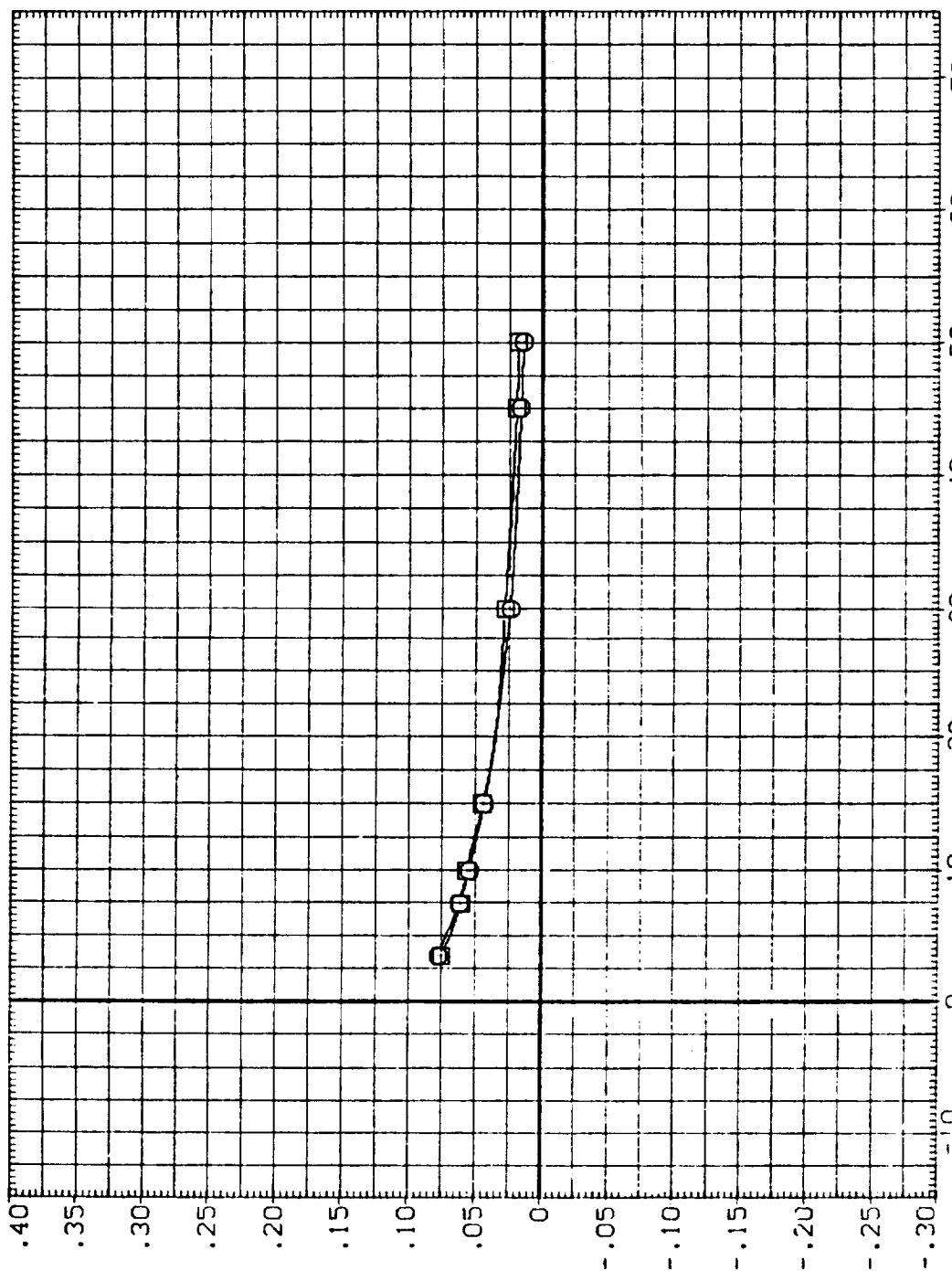


FIG. 46 EFFECT OF CARRIER RUDDER ON ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.  
(B)ALPHAC= 4.00

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL  
(4NH234)  
(4NH036)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 03S1 (ORB1TER DATA)  
ARC 14-120(CA238) 747/1 AT1 03S1 (ORB1TER DATA)

RUDDER ELEVON TORB MACH  
.000 .000 .000 .600  
10.000 6.000 6.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. XQ  
YMRP .0000 IN. YQ  
ZMRP 375.0000 IN. ZQ  
SCALE .0125

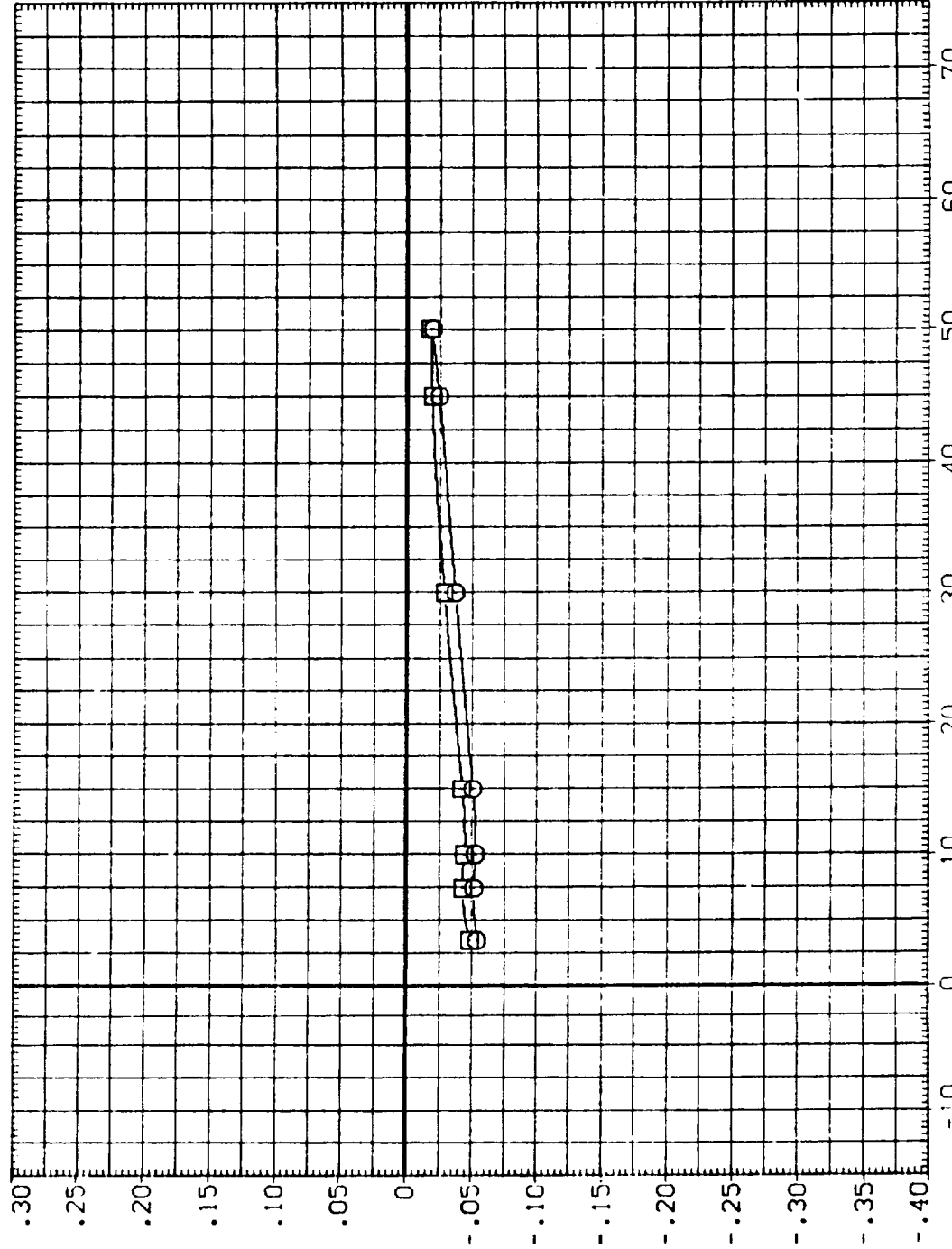


FIG. 47 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(A)ALPHAC= 2.00

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	ORRB	MACH	REFERENCE INFORMATION
(4NH234)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NH036)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

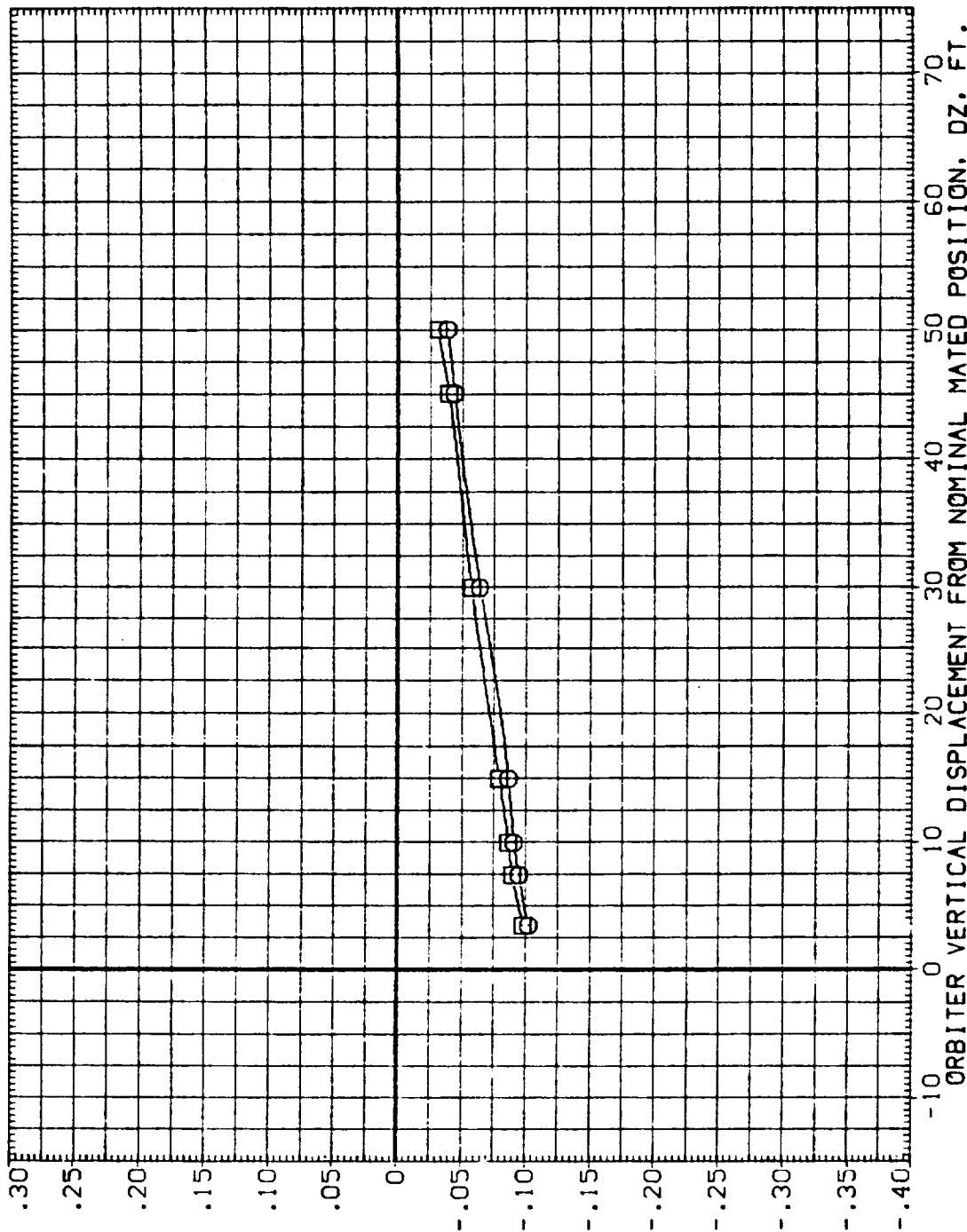


FIG. 47 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NH234)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORB1TER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NH036)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORB1TER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

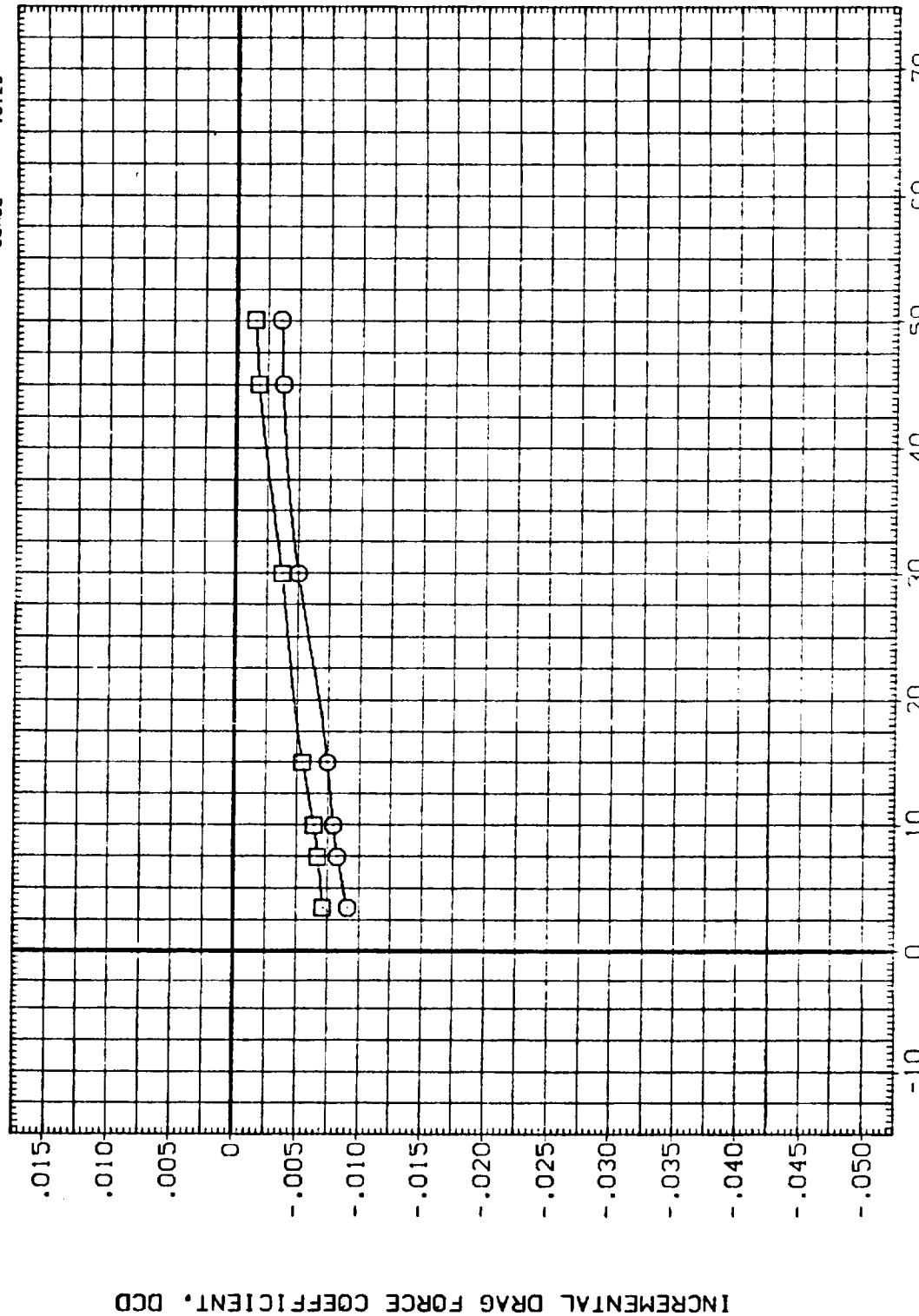


FIG. 47 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(A)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NH234)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NH036)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

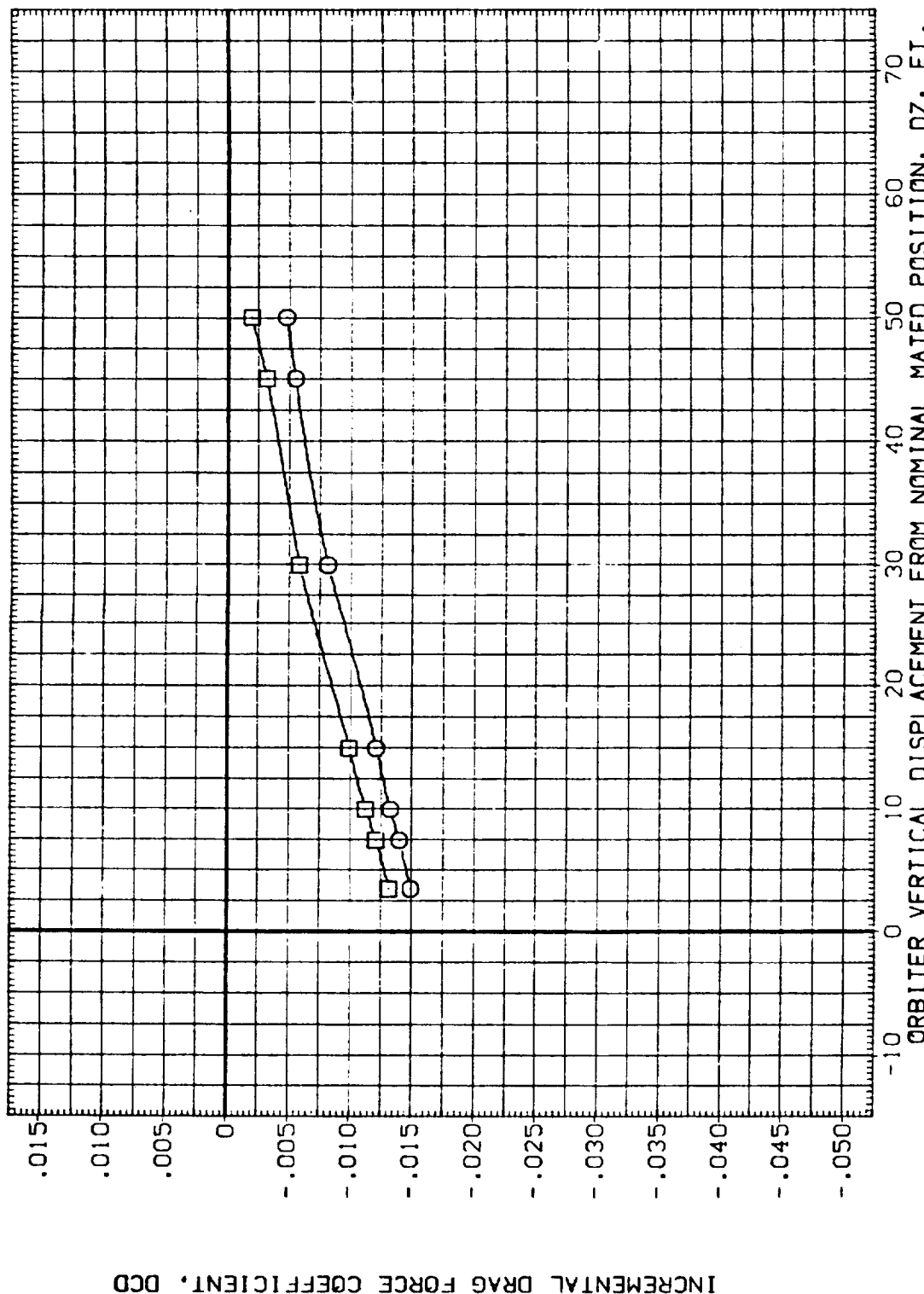


FIG. 47 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(B)ALPHAC= 4.00

DATA SET SYMBOL (4NH234) (4NH036) B

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)  
 ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)

RUDDER ELEVON 10RB MACH  
 .000 .000 .600  
 10.000 .000 .600

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

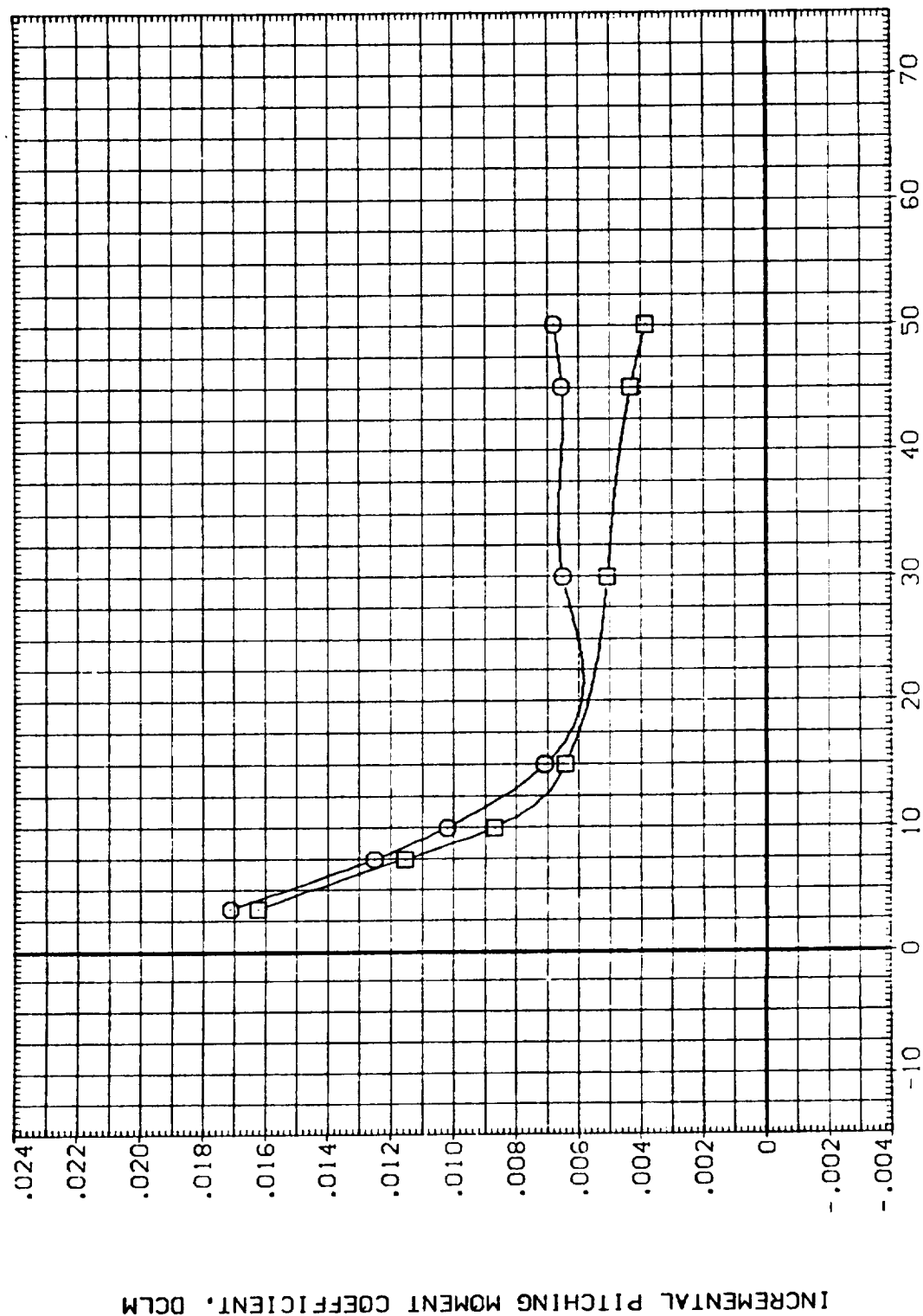


FIG. 47 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)

(A)ALPHAC= 2.00

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INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(4NH234)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	.000	.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NH036)	ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)	10.000	.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

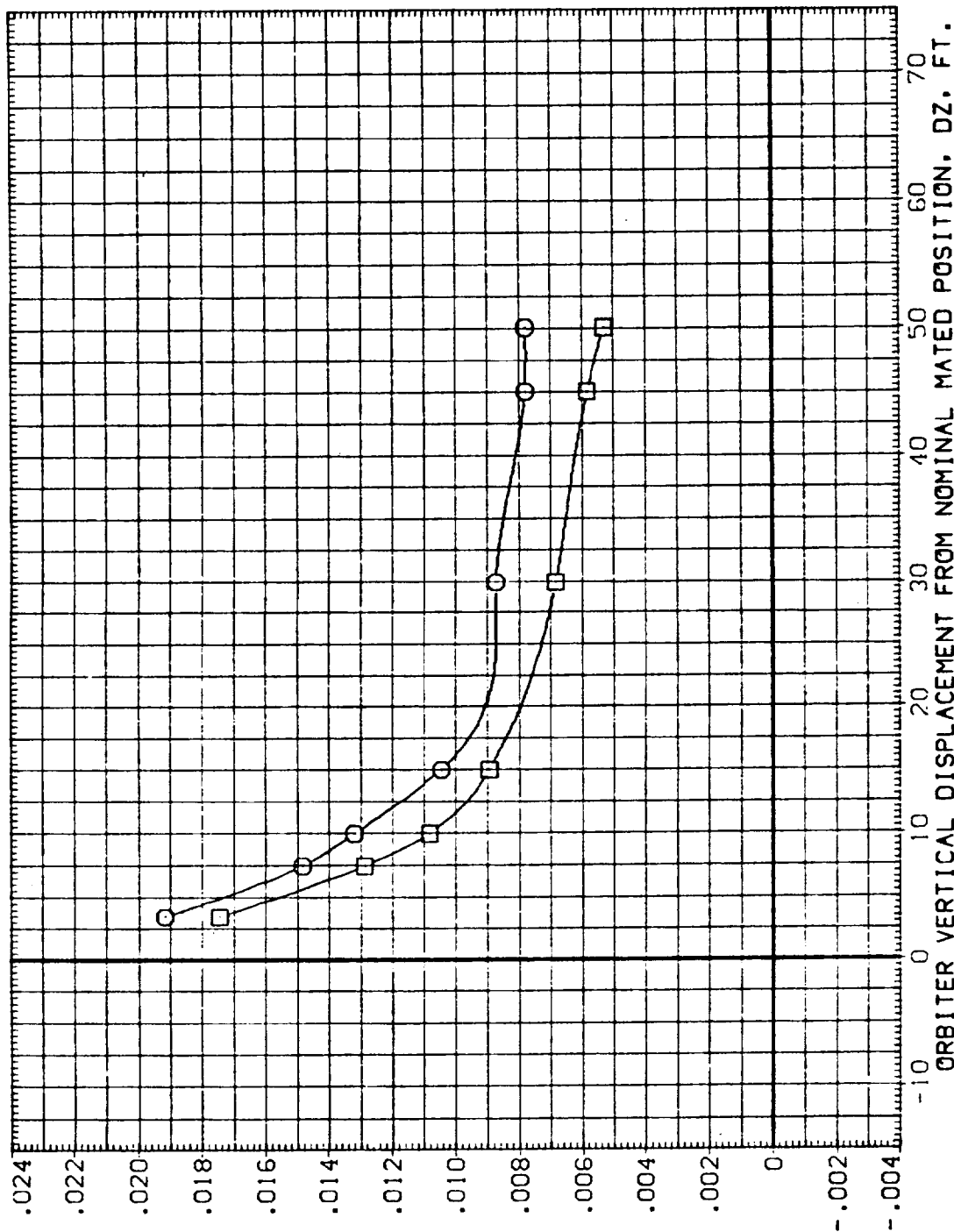
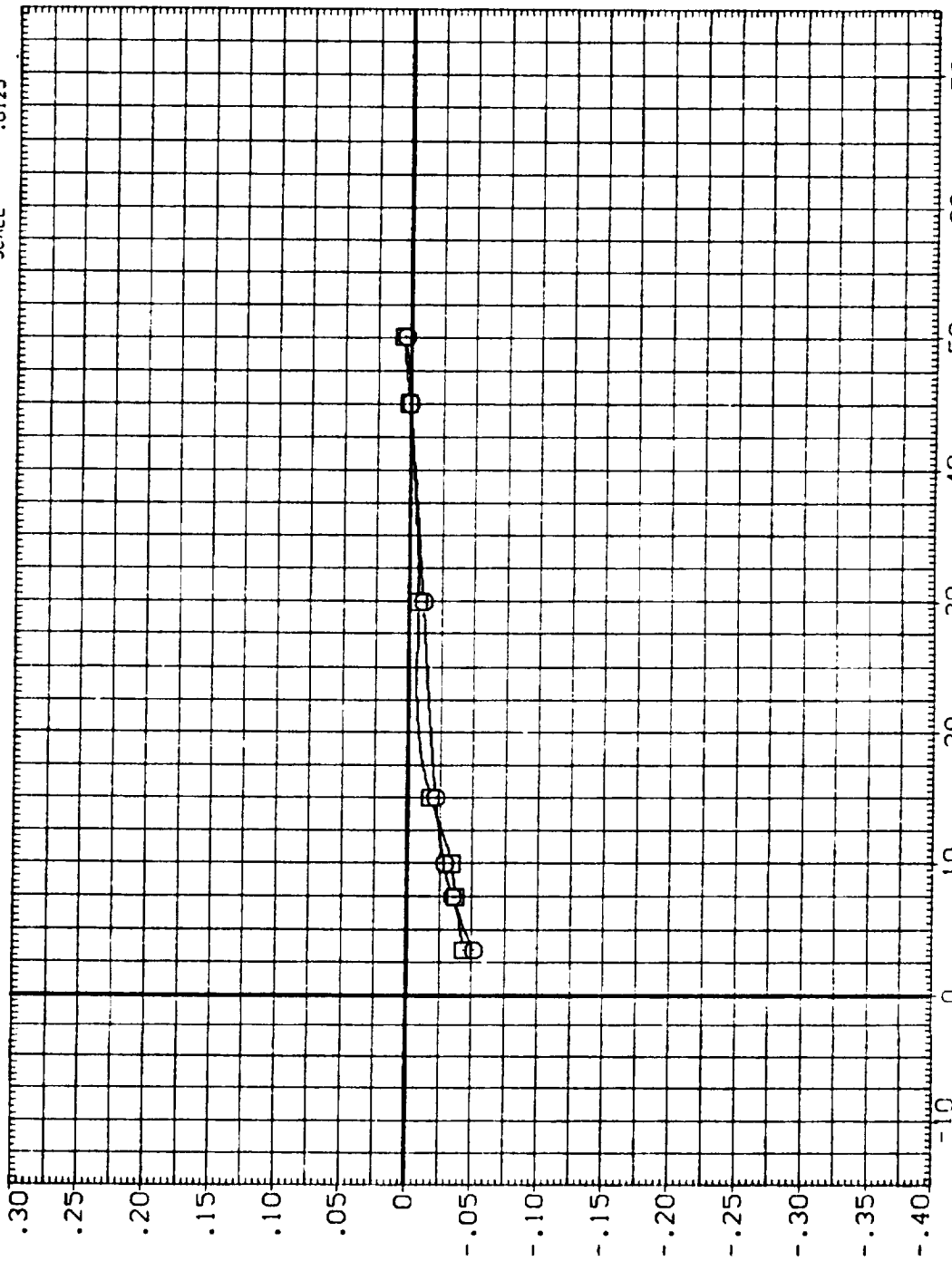


FIG. 47 EFFECT OF CARRIER RUDDER ON ORBITER(CARRIER STAB= 5.0 DEG., ORB T/C ON)  
(B)ALPHAC= 4.00



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNH035) ☐ ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)  
 (PNH020) ☐ ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 4.000 .000 .600 5.000 SREF 9500.0000 50.FT.  
 4.000 .000 .600 5.000 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 48 EFFECT OF ORBITER TAILCONE ON CARRIER DATA (IORB= 4.0 DEG.)

(A)ALPHAC= .00

DATA SET SYMBOL (FNH035) (PNH020)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT 03S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT 02S1 (CARRIER DATA)

REFERENCE INFORMATION  
SREF 5500.0000 50. FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP 190.7500 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

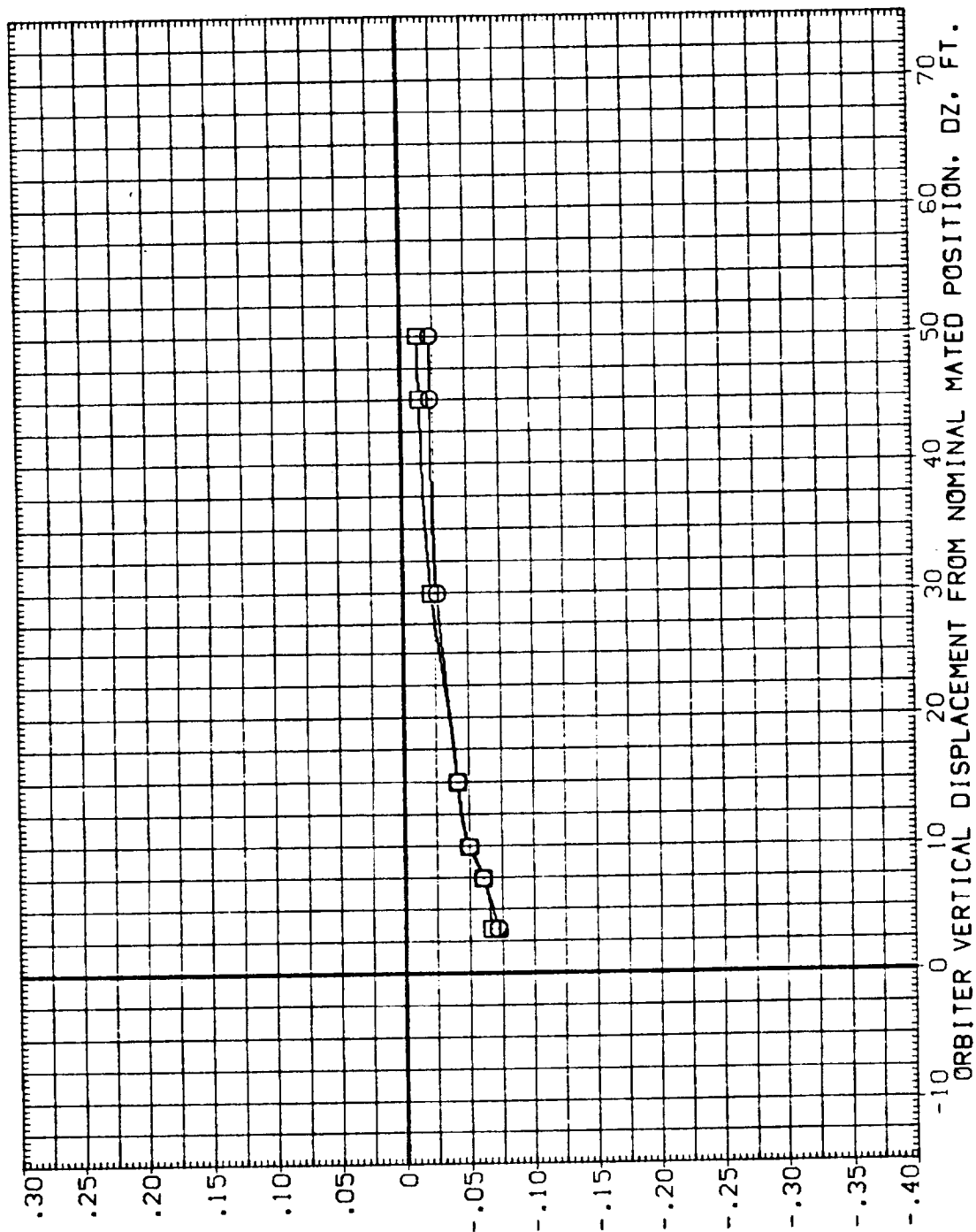


FIG. 48 EFFECT OF ORBITER TAILCONE ON CARRIER DATA (IORB= 4.0 DEG.)

(B)ALPHAC= 2.00

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH035)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH020)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	4.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.5000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

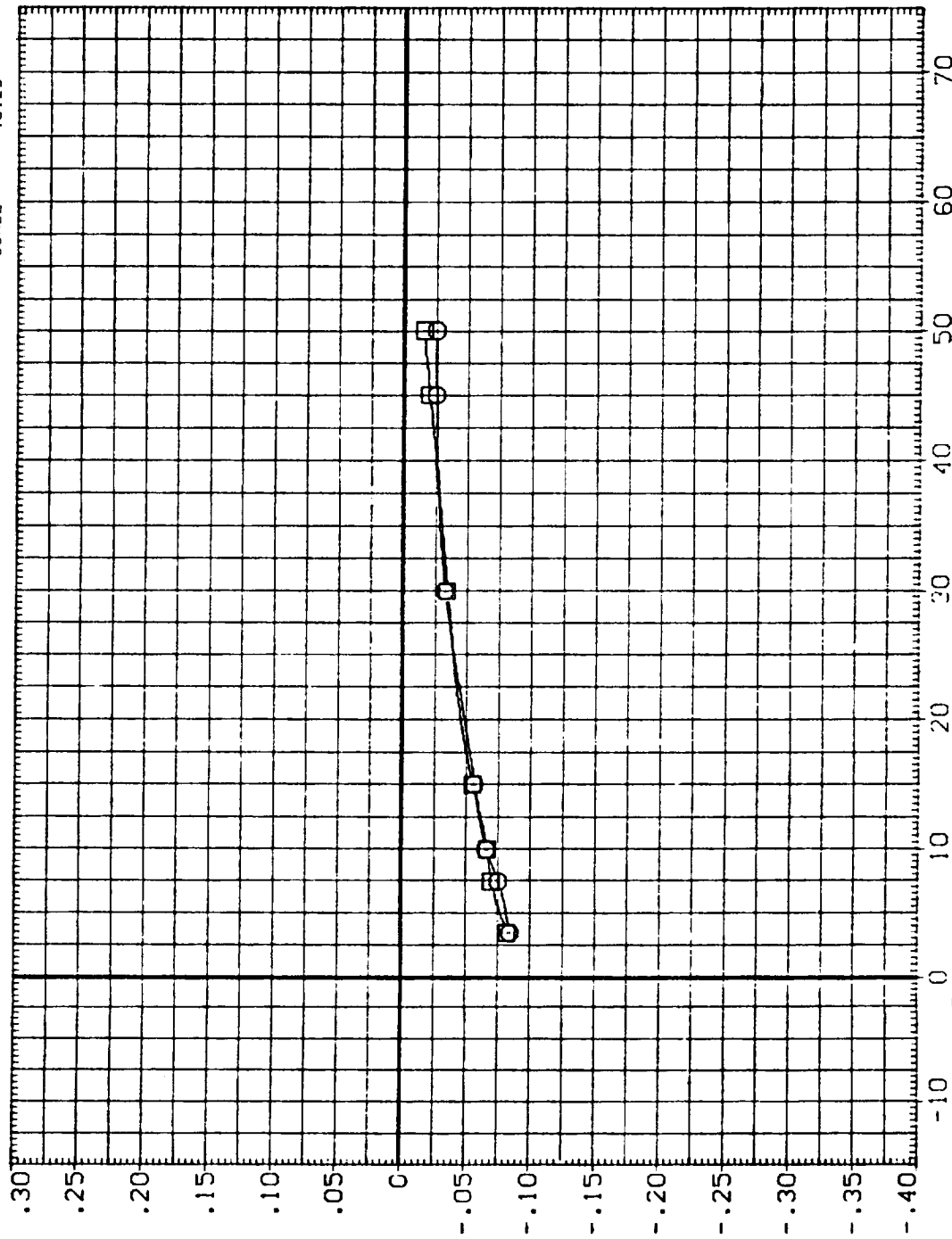


FIG. 48 EFFECT OF ORBITER TAILCONE ON CARRIER DATA (IORB= 4.0 DEG.)

(C)ALPHAC= 4.00

DATA SET SYMBOL (PNH035) (PNH020)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
 ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

REFERENCE INFORMATION  
 SREF 5500.0000 50.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

ORB 4.000 4.000

ELEVON .000 .000

MACH .600 .600

STAB 5.000 5.000

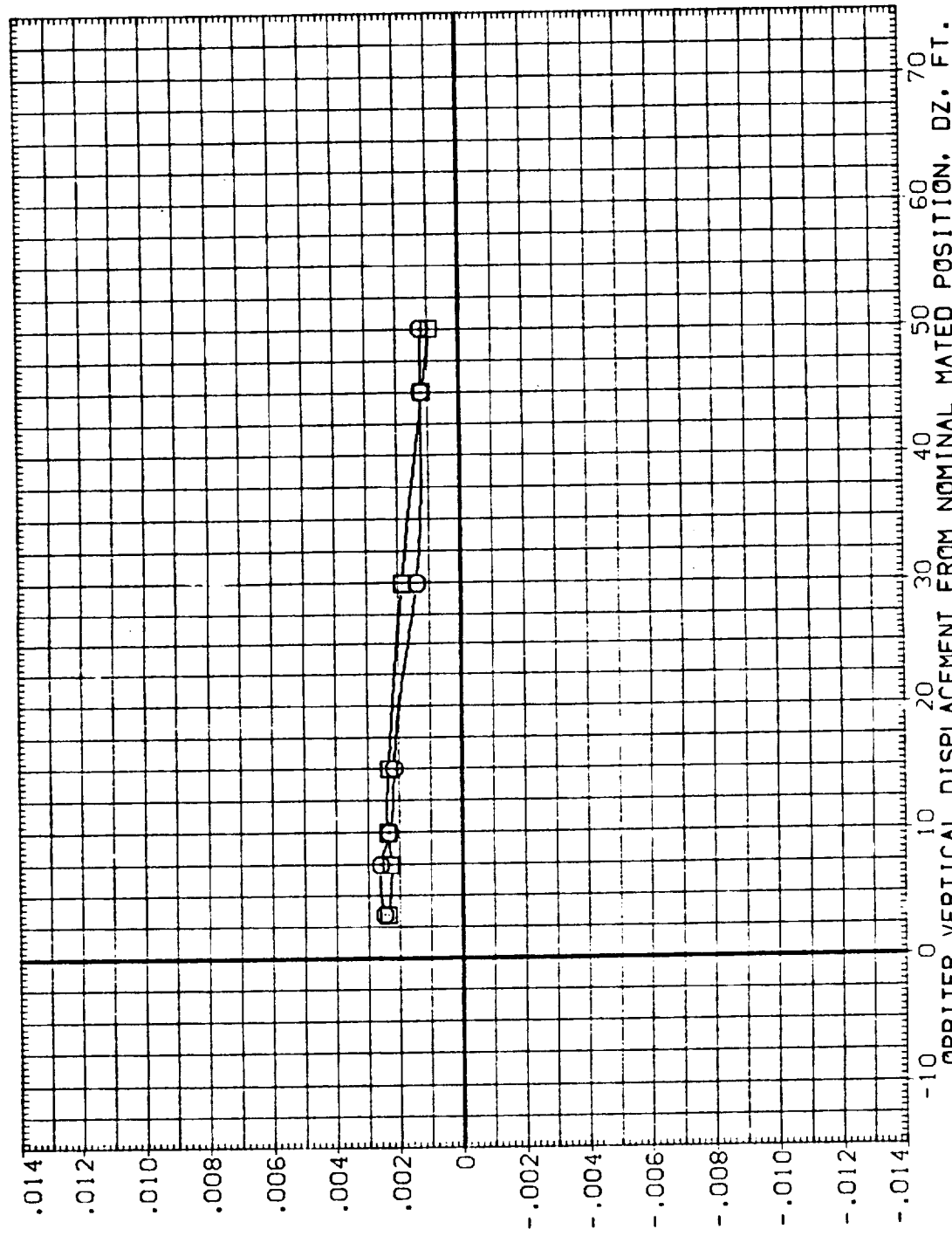


FIG. 48 EFFECT OF ORBITER TAILCONE ON CARRIER DATA (ORB= 4.0 DEG.)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH035)	ARC 14-120(CA238) 747/1 AT: 0351 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH020)	ARC 14-120(CA238) 747/1 AT: 0251 (CARRIER DATA)	4.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						YMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

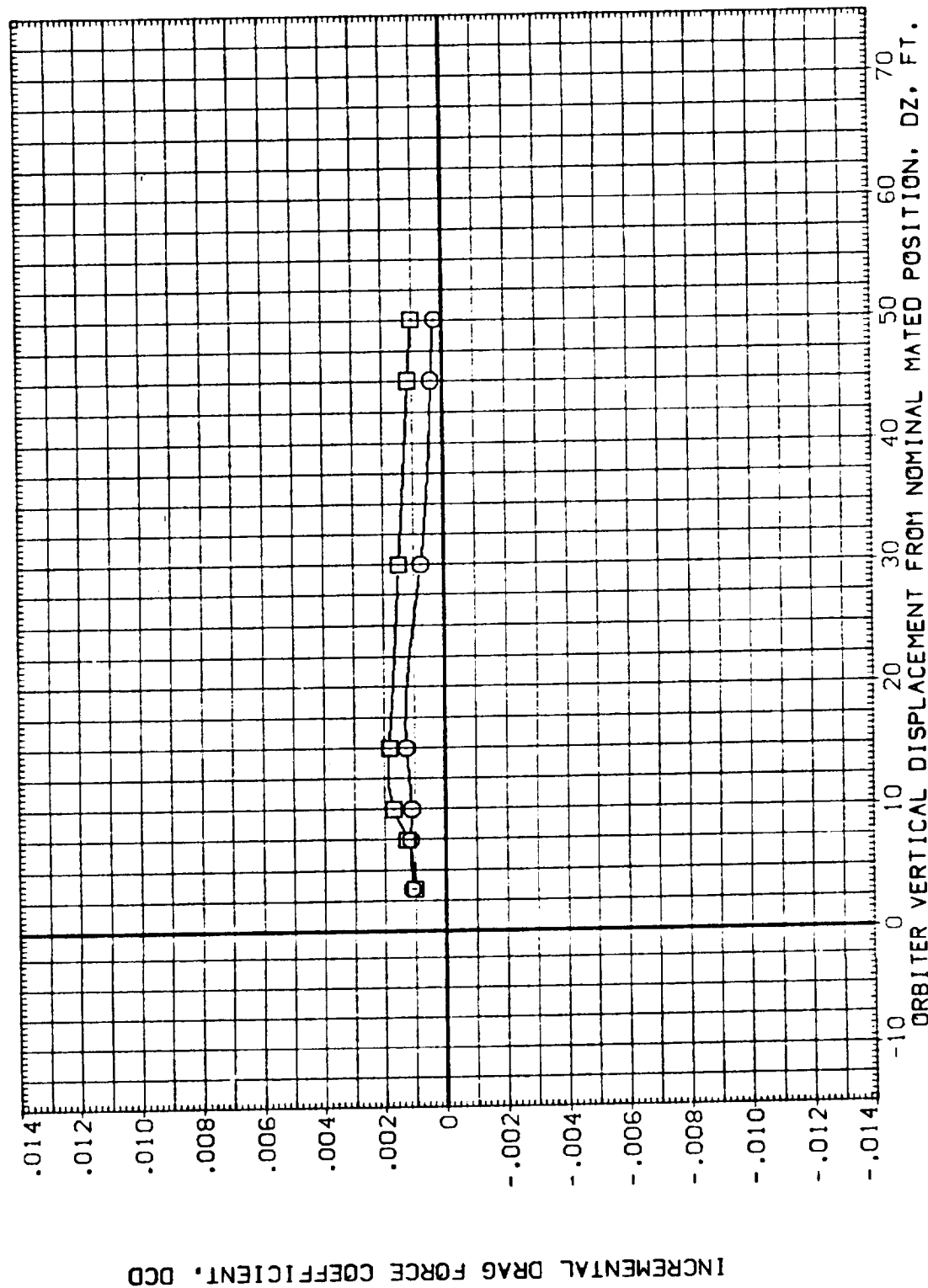


FIG. 48 EFFECT OF ORBITER TAILCONE ON CARRIER DATA (IORB= 4.0 DEG.)

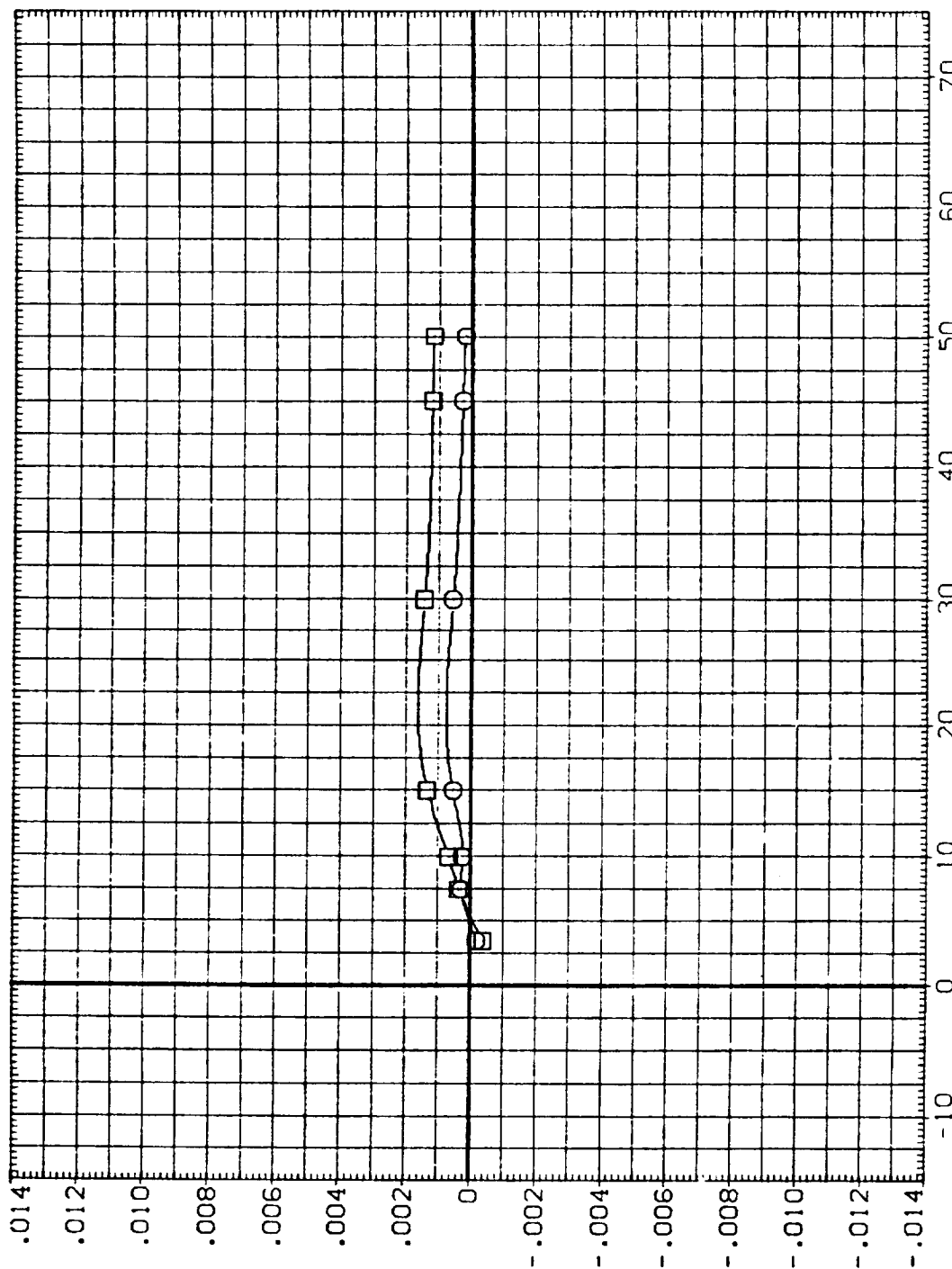
(B) ALPHAC= 2.00

DATA SET SYMBOL (PNH035) (PNH020)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

IORB 4.000 4.000  
ELEVON .000 .000  
MACH .600 .600  
STAB 5.000 5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ. FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 48 EFFECT OF ORBITER TAILCONE ON CARRIER DATA (IORB= 4.0 DEG.)

(C)ALPHAC= 4.00

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH035)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	4.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH020)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	4.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

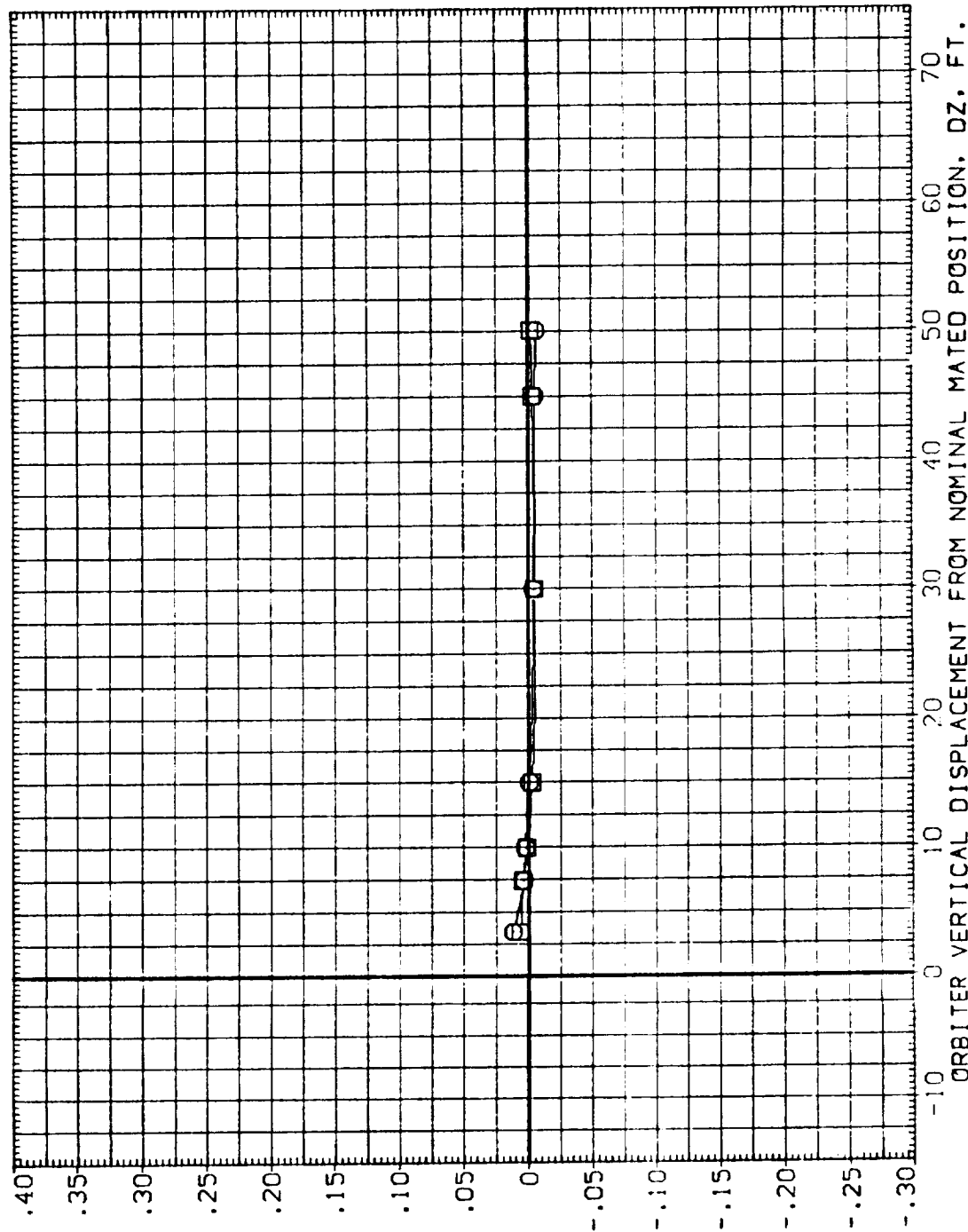


FIG. 48 EFFECT OF ORBITER TAILCONE ON CARRIER DATA (IORB= 4.0 DEG.)

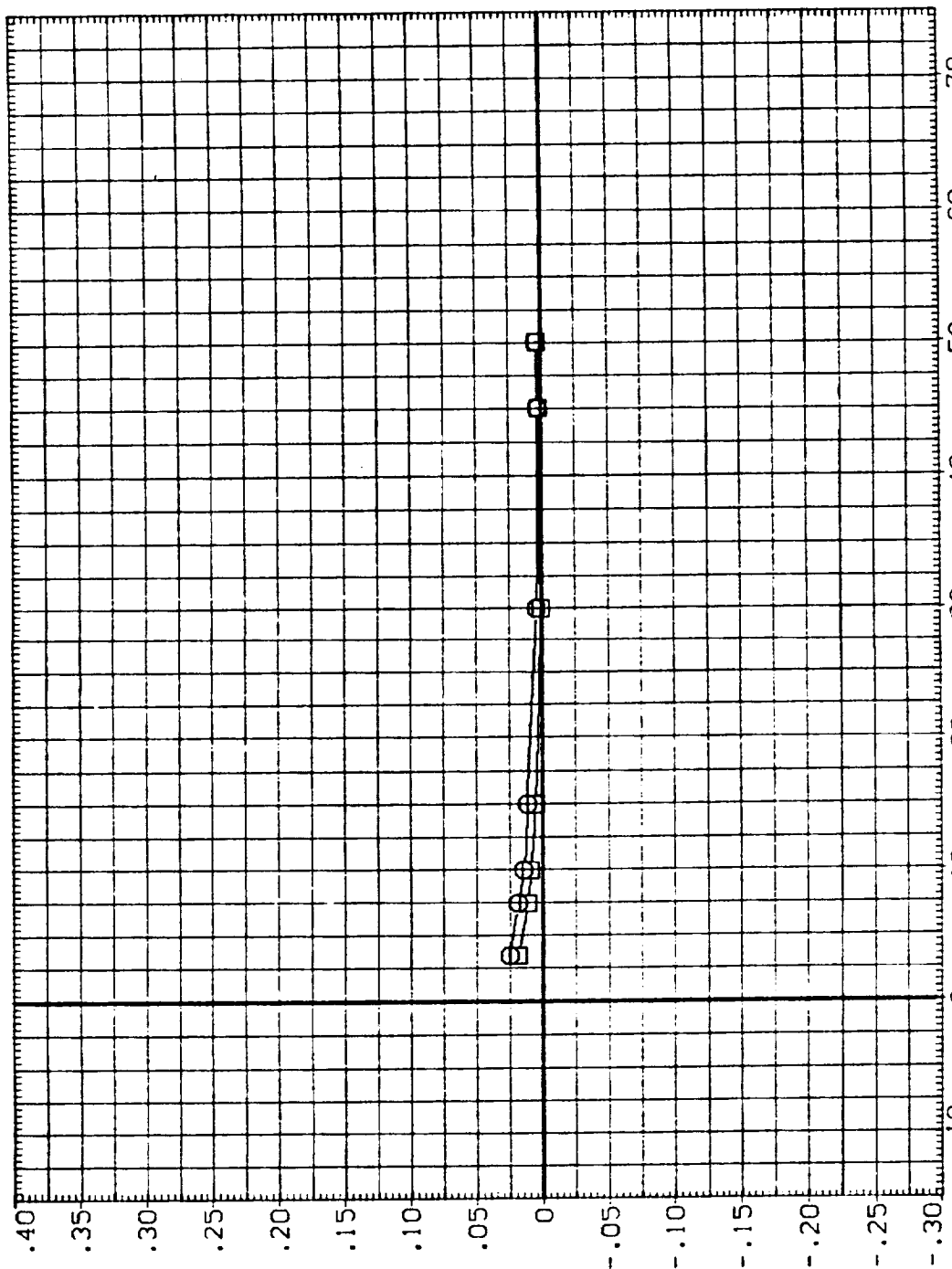
(A)ALPHAC= .50

DATA SET SYMBOL (PNH035) (PNH020)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
 ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

IORB ELEVON MACH STAB  
 4.000 .000 .600 5.000  
 4.000 .000 .600 5.000

REFERENCE INFORMATION  
 SREF 5500.0000 50.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP 190.7500 IN. YC  
 ZMRP .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION. DZ. FT.

FIG. 48 EFFECT OF ORBITER TAILCONE ON CARRIER DATA (IORB= 4.0 DEG.)

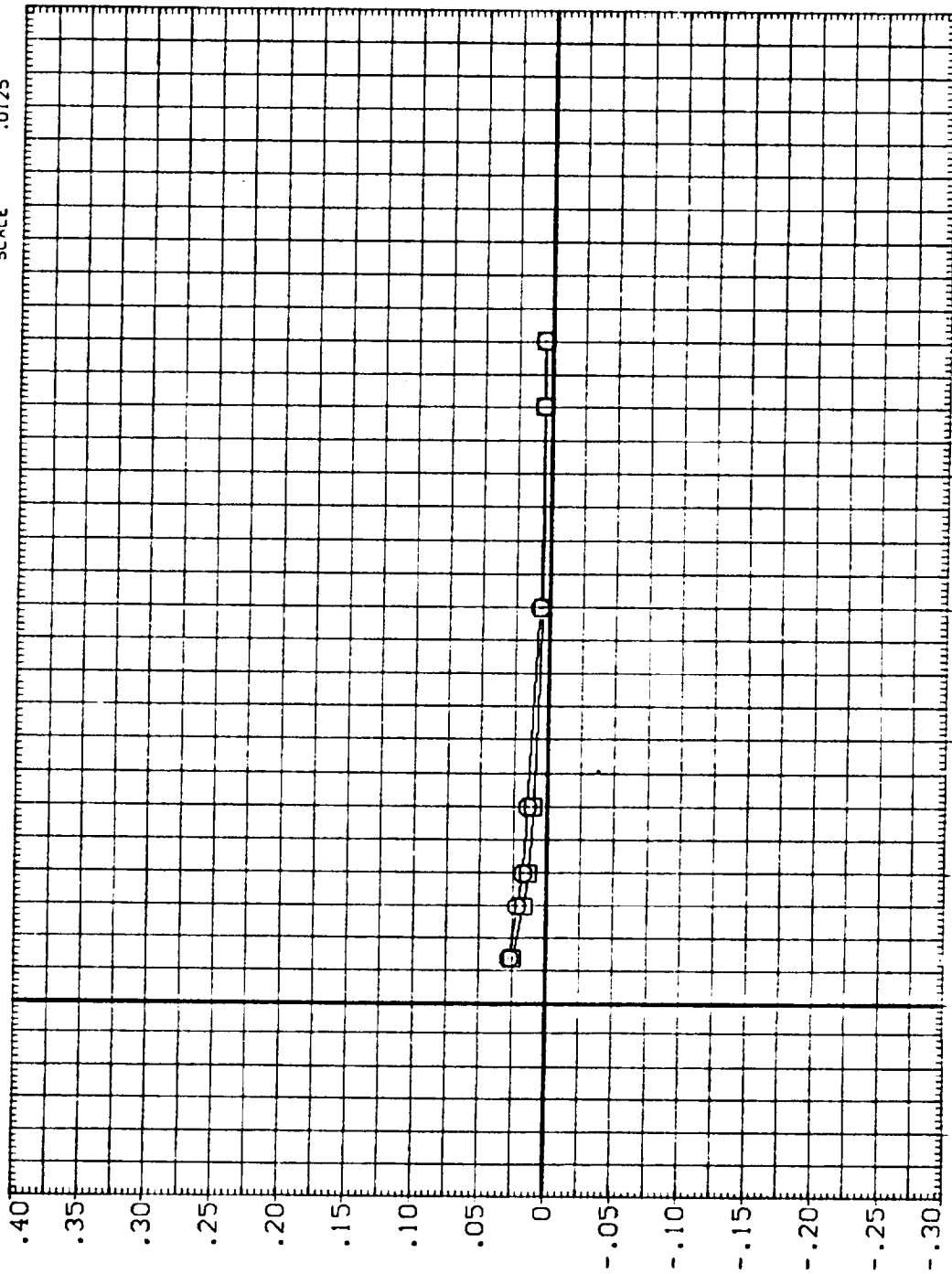
(B)ALPHAC= 2.00



DATA SET SYMBOL (PNH035) (PNH020) CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 747/1 AT: 03S1 (CARRIER DATA)  
 ARC 14-120(CA238) 747/1 AT: 02S1 (CARRIER DATA)

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

STAB 5.000  
 MACH .600  
 ELEVON .000  
 IORB 4.000



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 48 EFFECT OF ORBITER TAILCONE ON CARRIER DATA (IORB= 4.0 DEG.)

(C)ALPHAC= 4.00

DATA SET SYMBOL (4NH035) (4NH020) CONFIGURATION DESCRIPTION ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA) 747/1 AT1 0251 (ORBITER DATA) IORB 4.000 ELEVON .000 MACH .600 STAB 5.000 REFERENCE INFORMATION SREF 2690.0000 SQ.FT. LREF 474.8100 IN. BREF 936.6800 IN. XMRP 1109.0000 IN. YMRP .0000 IN. ZMRP 375.0000 IN. SCALE .0125

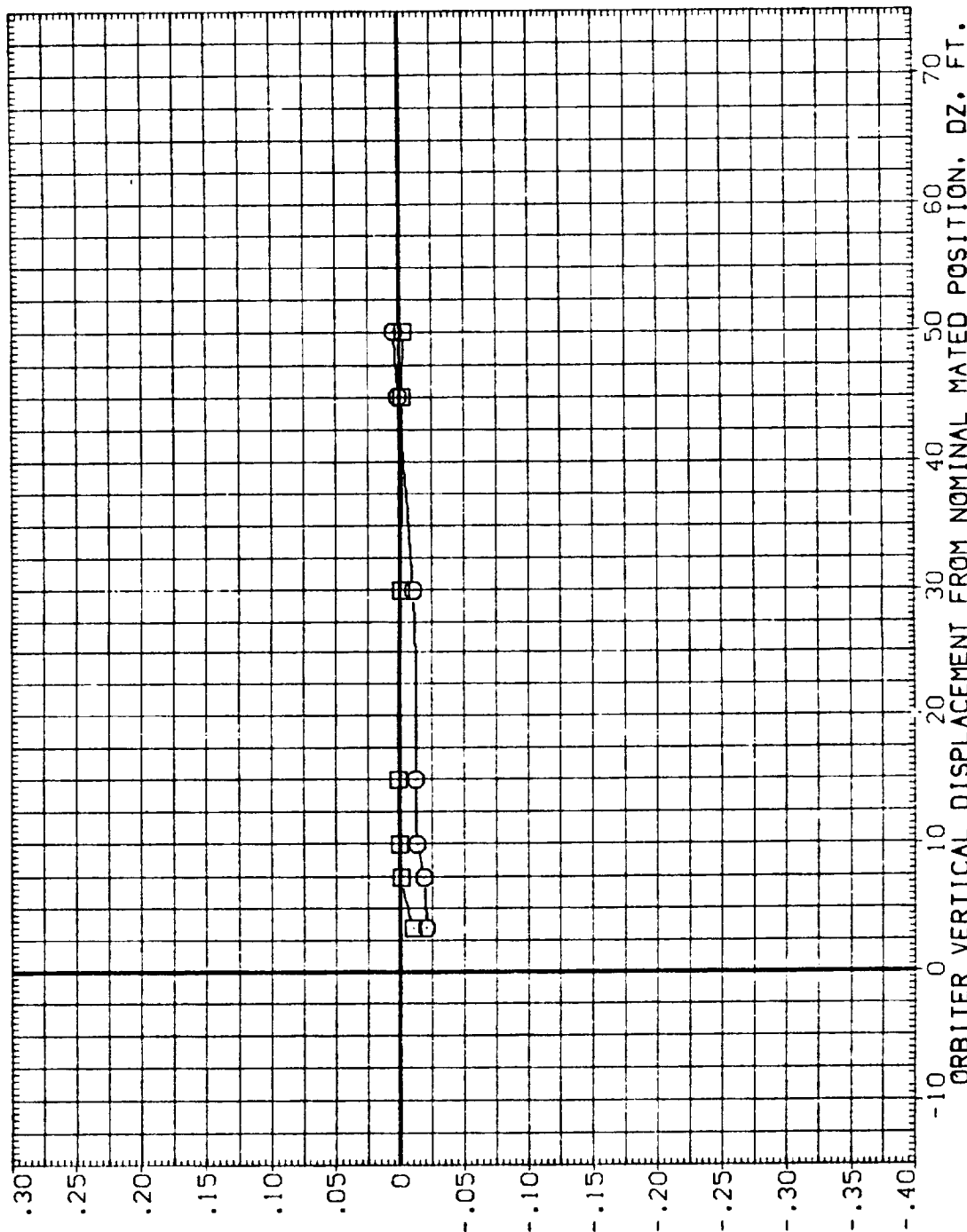


FIG. 49 EFFECT OF ORBITER TAILCONE ON ORBITER DATA (IORB= 4.0 DEG.)

(A)ALPHAC= .00

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH035)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	4.000	.000	.600	5.000	SREF	2690.0000 SQ.FT.
(4NH020)	ARC 14-120(CA238) 747/1 AT1 0231 (ORBITER DATA)	4.000	.000	.600	5.000	LREF	474.8100 IN.
						BREF	936.8800 IN.
						XMRP	1109.0000 IN. X0
						YMRP	.0000 IN. Y0
						ZMRP	375.0000 IN. Z0
						SCALE	.0125

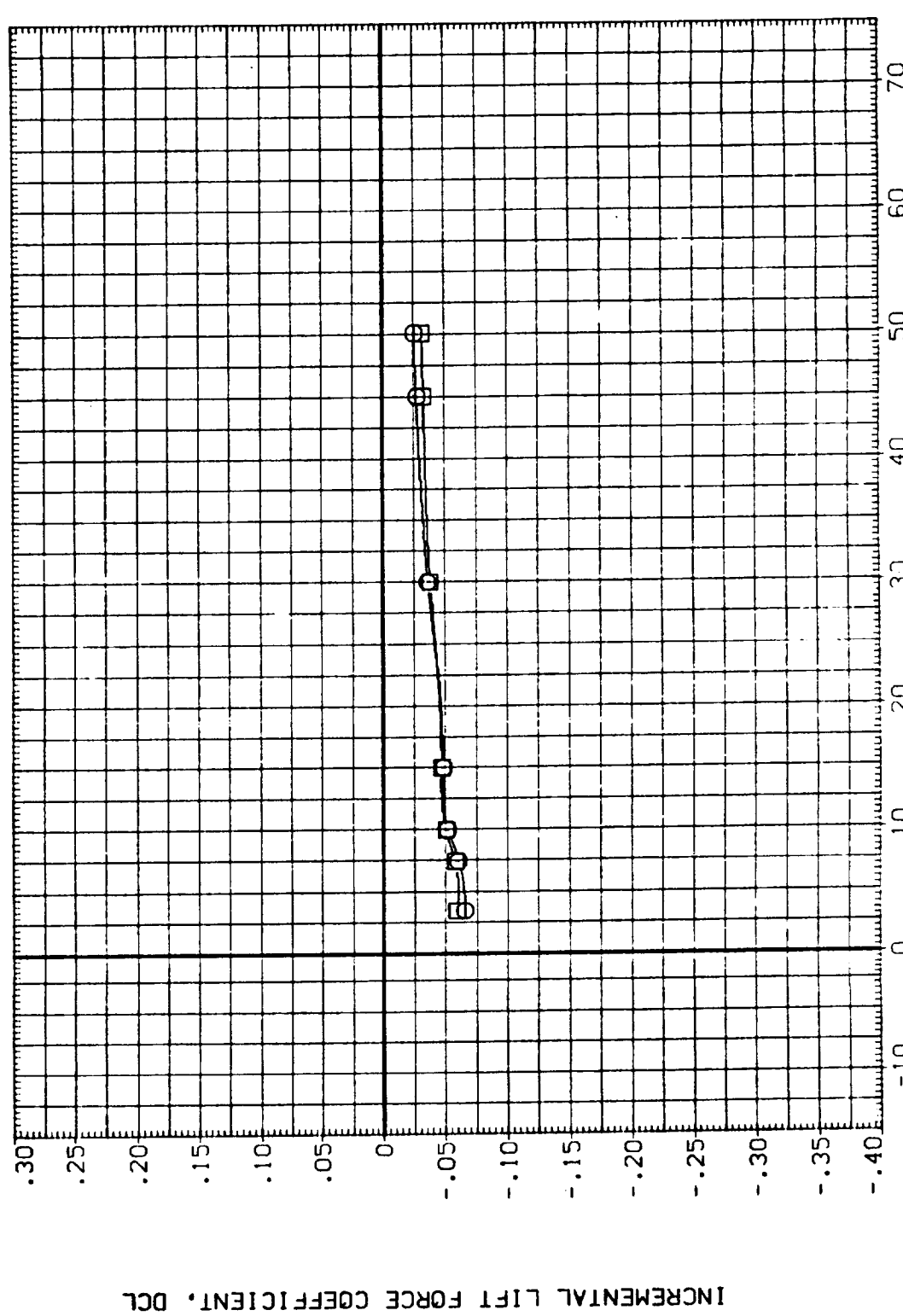


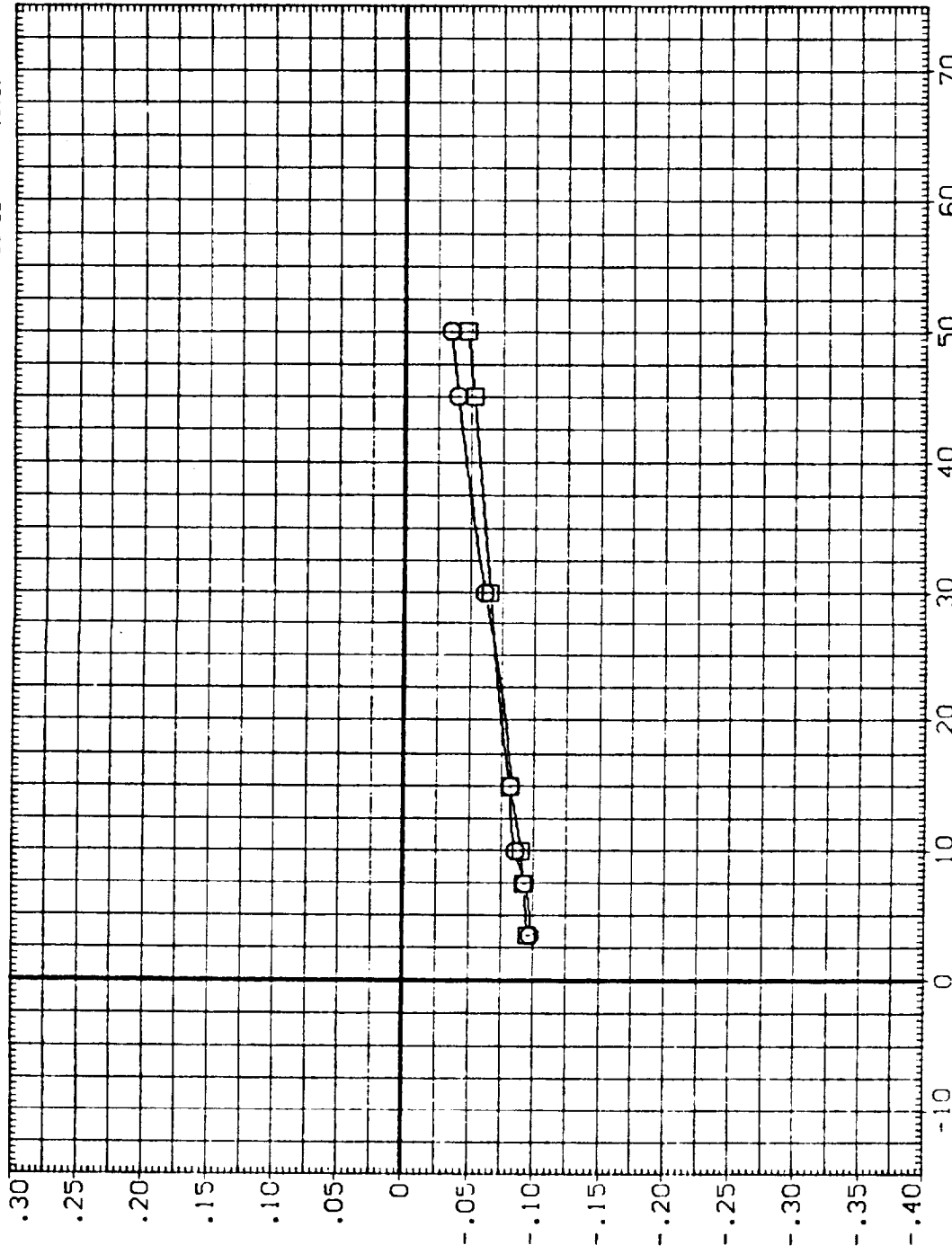
FIG. 49 EFFECT OF ORBITER TAILCONE ON ORBITER DATA (IORB= 4.0 DEG.)  
 (B)ALPHAC= 2.00 PAGE 401

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(4NH035) ARC 14-120(CA238) 747/1 AT: 0351 (ORBITER DATA)  
(4NH020) ARC 14-120(CA238) 747/1 AT: 0251 (ORBITER DATA)

IORB 4.000  
ELEVON .000  
MACH .600  
STAB 5.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ. FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 49 EFFECT OF ORBITER TAILCONE ON ORBITER DATA(IORB= 4.0 DEG.)

(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH035)	ARC 14-120(CA238) 747/1 AT1 035 (ORBITER DATA)	4.000	.000	.600	5.000	SREF	2690.0000 SO. FT.
(4NH020)	ARC 14-120(CA238) 747/1 AT1 025 (ORBITER DATA)	4.000	.000	.600	5.000	LREF	474.8100 IN.
						BREF	936.6800 IN. X0
						YMRP	1109.0000 IN. Y0
						ZMRP	375.0000 IN. Z0
						SCALE	.0125

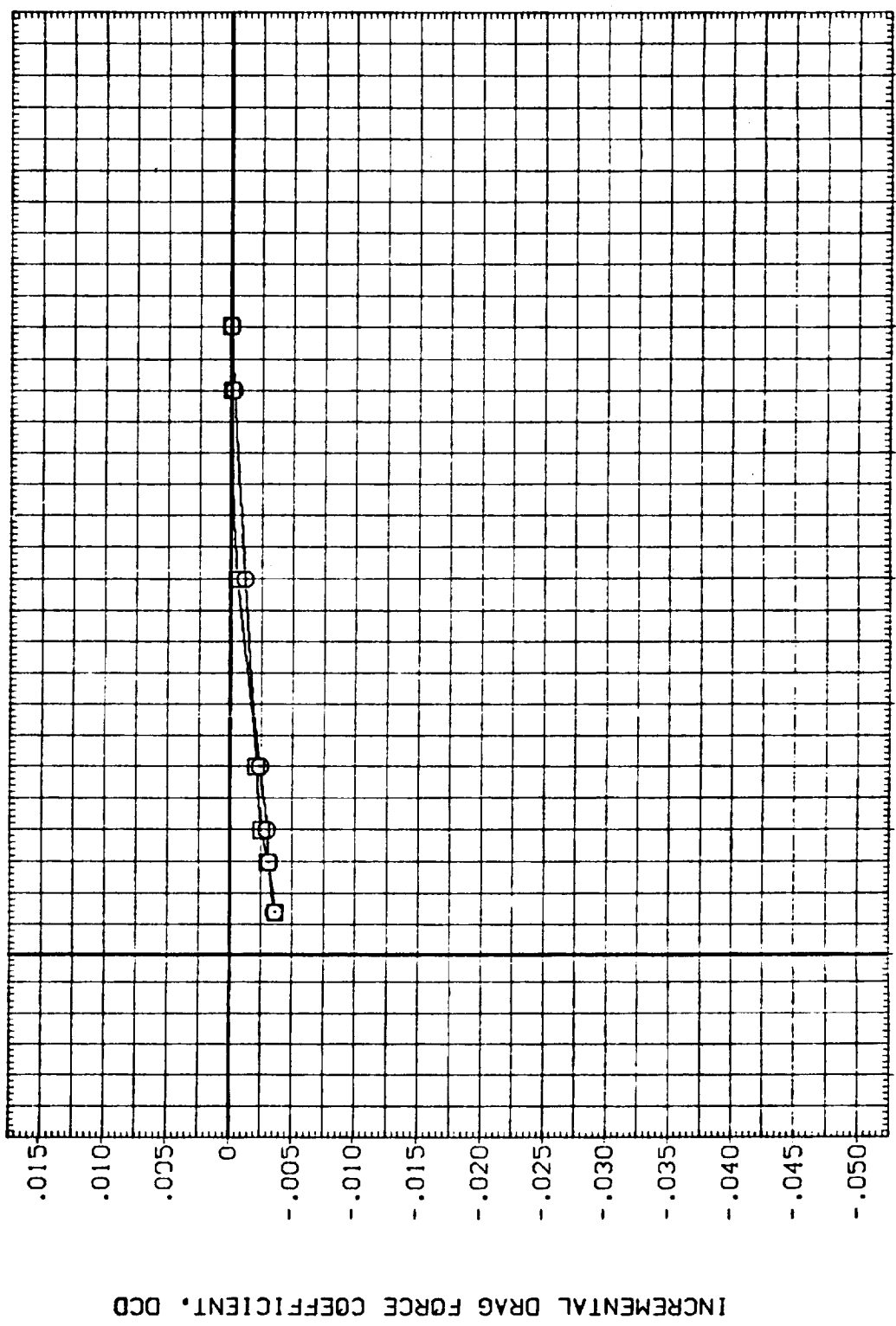


FIG. 49 EFFECT OF ORBITER TAILCONE ON ORBITER DATA (IORB= 4.0 DEG.)

(AJALPHAC= .00

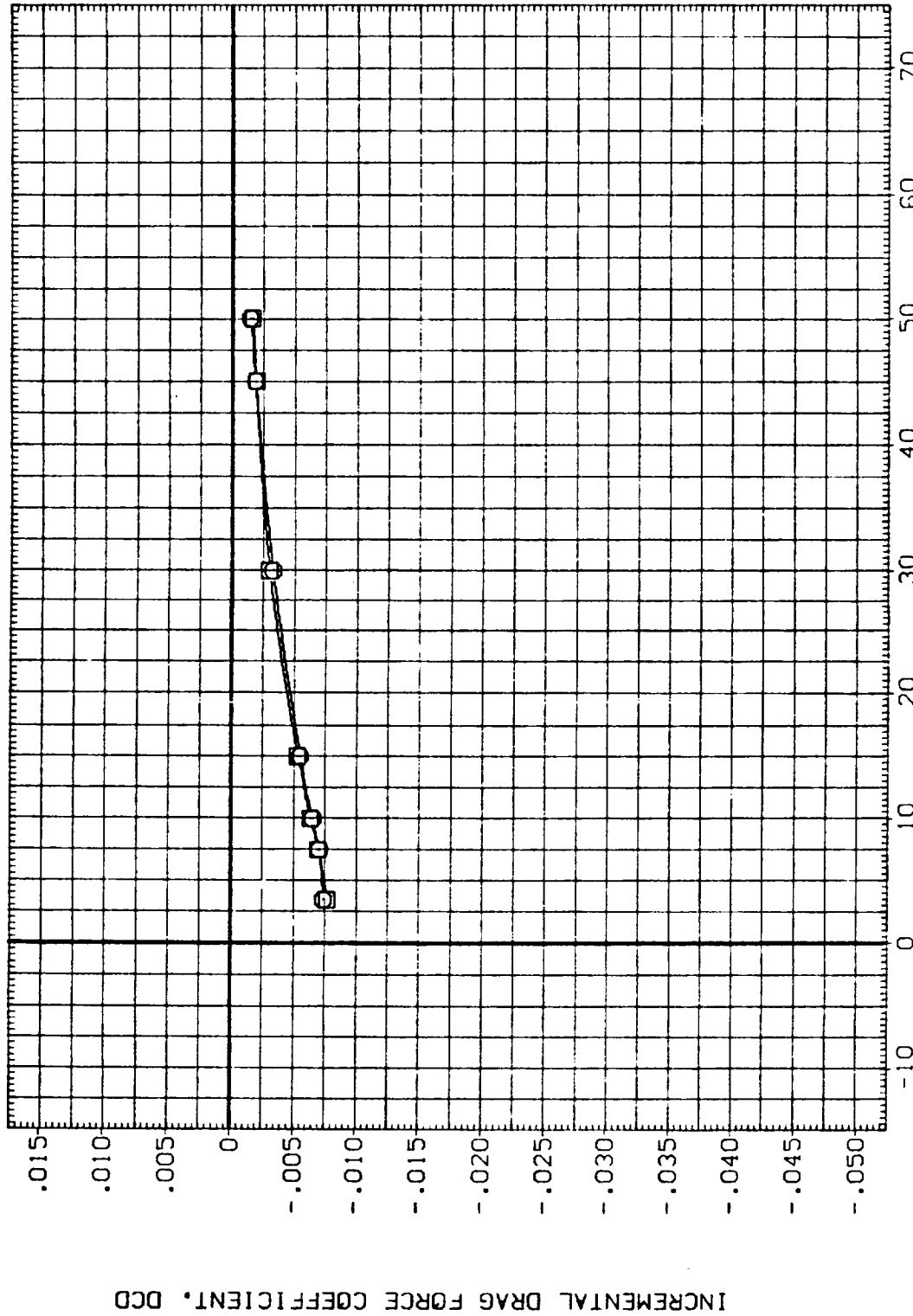
25

DATA SET SYMBOL  
(4NH035)  
(4NH020)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)

IORB  
ELEVON  
MACH  
STAB

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

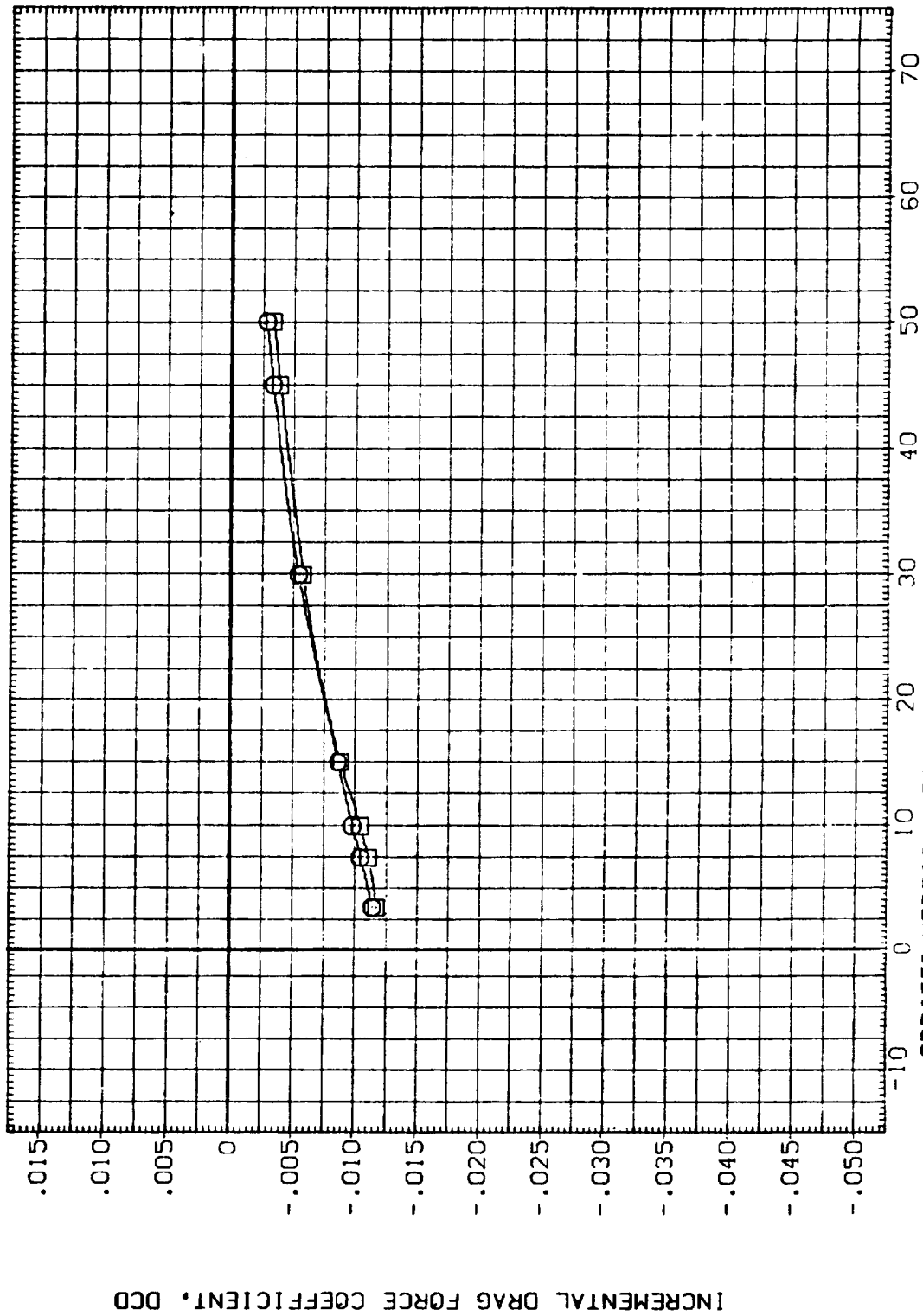


ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 49 EFFECT OF ORBITER TAILCONE ON ORBITER DATA (IORB= 4.0 DEG.)

(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
{ 4NH035 }	ARC 14-120(CA238) 747/1 AT1 Q3S1 (ORBITER DATA)	4.000	.000	.600	5.000	SREF 2690.0000 50.FT.
{ 4NH020 }	ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)	4.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						YMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 49 EFFECT OF ORBITER TAILCONE ON ORBITER DATA (IORB= 4.0 DEG.)

(C)ALPHAC= 4.00

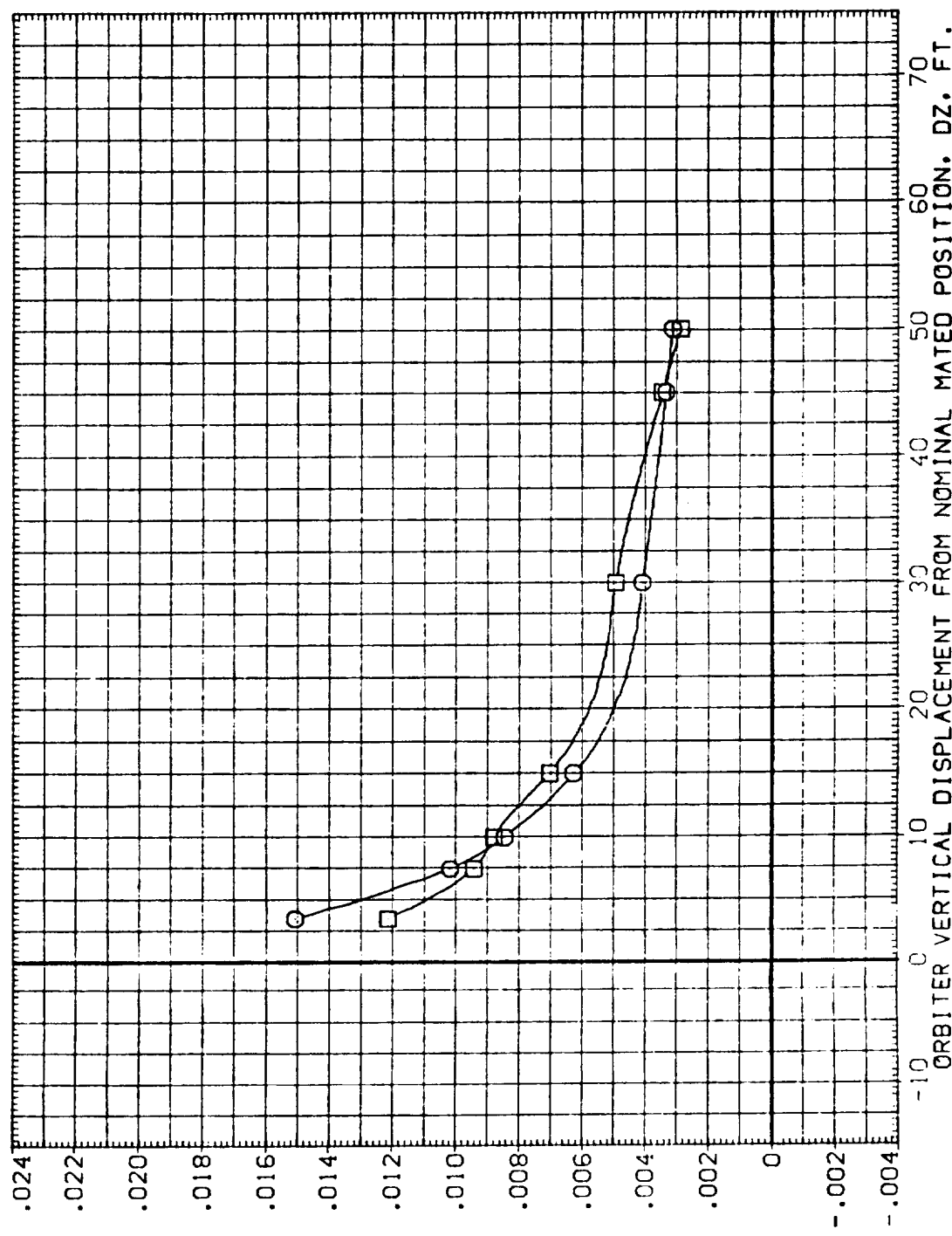
INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 49 EFFECT OF ORBITER TAILCONE ON ORBITER DATA (IORB= 4.0 DEG.)

(CA)ALPHAC=.00



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		IORB		ELEVON		MACH		STAB		REFERENCE INFORMATION	
(4NH035)	□	ARC 14-120(CA238)	747/1 AT1	0351 (ORBITER DATA)	4.000	.000	.600	5.000	SREF	2690.0000	50. FT.		
(4NH020)	□	ARC 14-120(CA238)	747/1 AT1	0251 (ORBITER DATA)	4.000	.000	.600	5.000	LREF	474.8100	IN.		
									BREF	936.6800	IN.		
									XMRP	1109.0000	IN. X0		
									YMRP	375.0000	IN. Y0		
									ZMRP	0.0125	SCALE		



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 49 EFFECT OF ORBITER TAILCONE ON ORBITER DATA (IORB= 4.0 DEG.)

DATA SET SYMBOL: CONFIGURATION DESCRIPTION

(4NH035)  
(4NH020)

ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)

IORB ELEVON MACH STAB  
4.000 .000 .600 5.000  
4.000 .000 .600 5.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

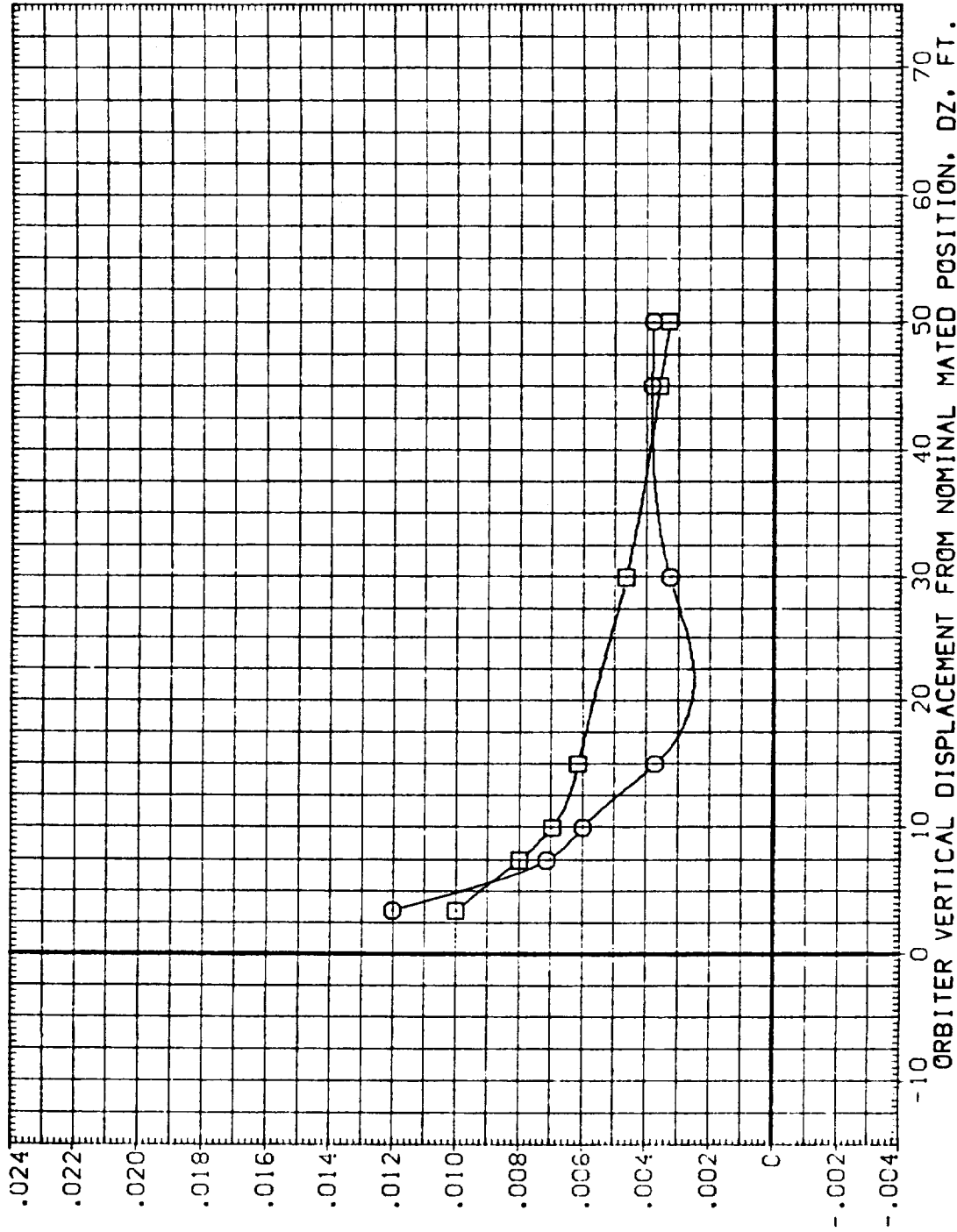


FIG. 49 EFFECT OF ORBITER TAILCONE ON ORBITER DATA (IORB= 4.0 DEG.)

(C)ALPHAC= 4.00

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REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL  
(PNH034)  
(PNH023)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

IORB  
6.000  
6.000

ELEVON  
.000  
.000

MACH  
.600  
.600

STAB  
5.000  
5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

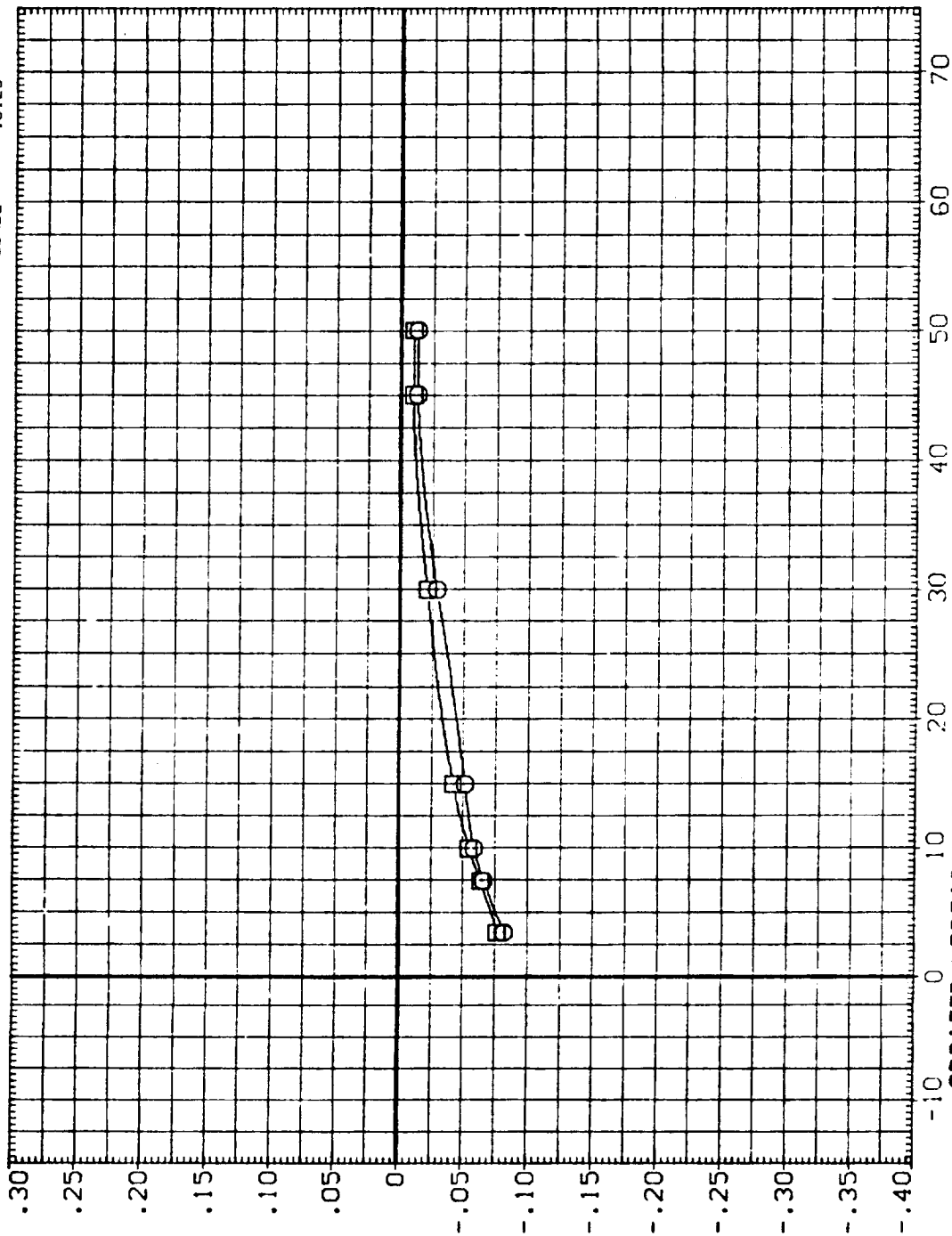


FIG. 50 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)

(A)ALPHAC= .00

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 50.FT.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

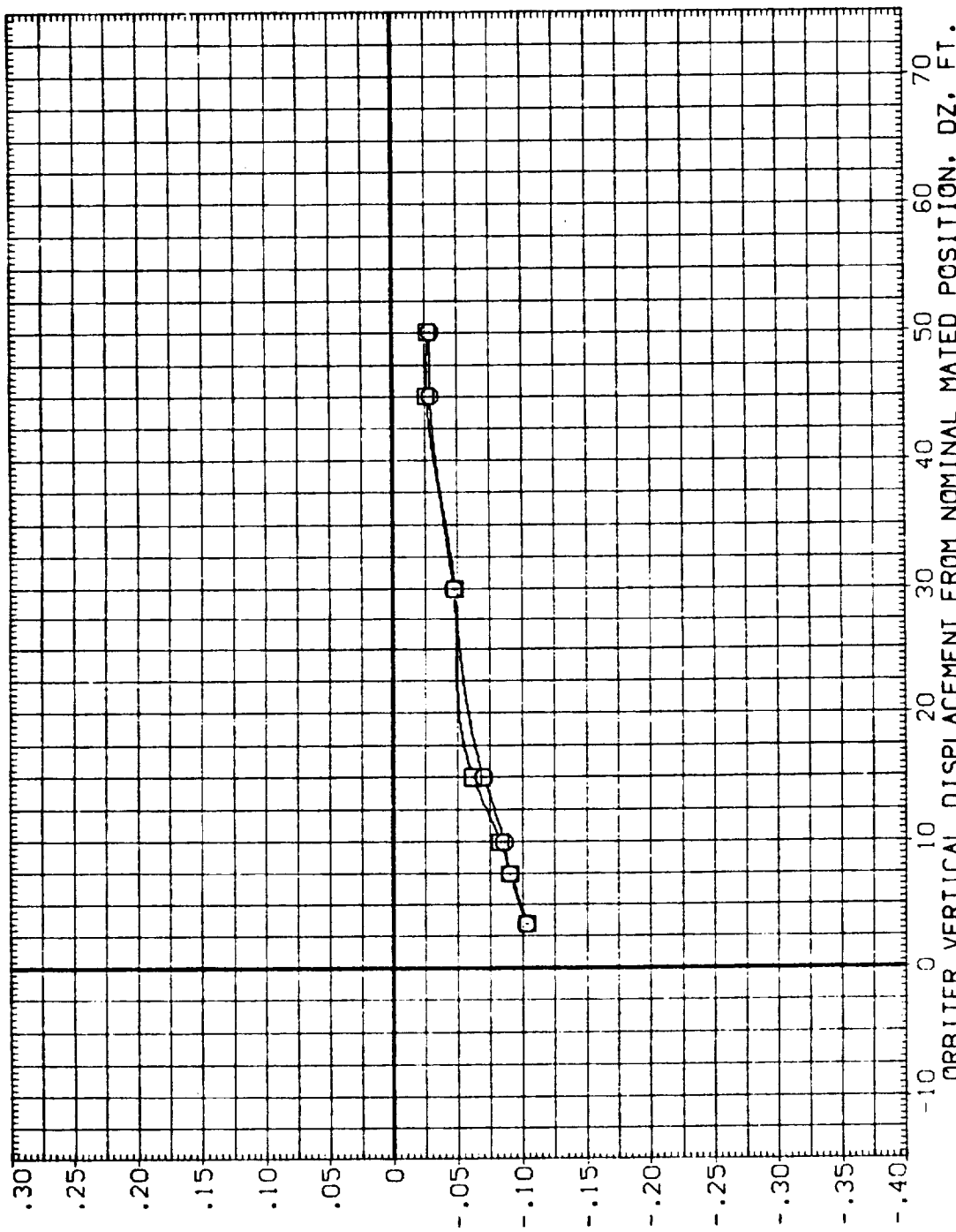


FIG. 50 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)  
(B) ALPHAC= 2.00

DATA SET SYMBOL      CONFIGURATION DESCRIPTION      IORB      ELEVON      MACH      STAB      REFERENCE INFORMATION

(PNH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

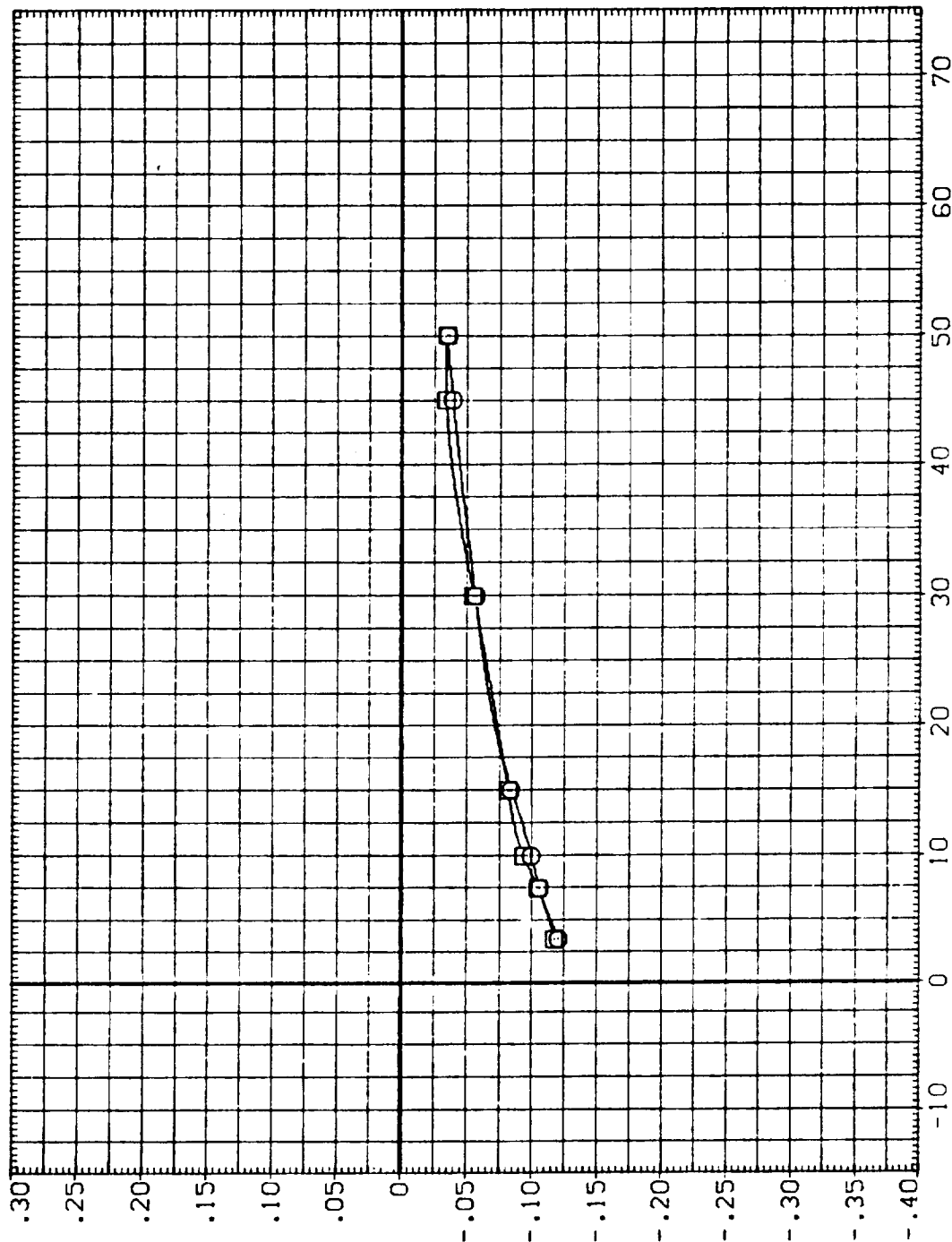


FIG. 50 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA238) 747/1 AT1 Q351 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

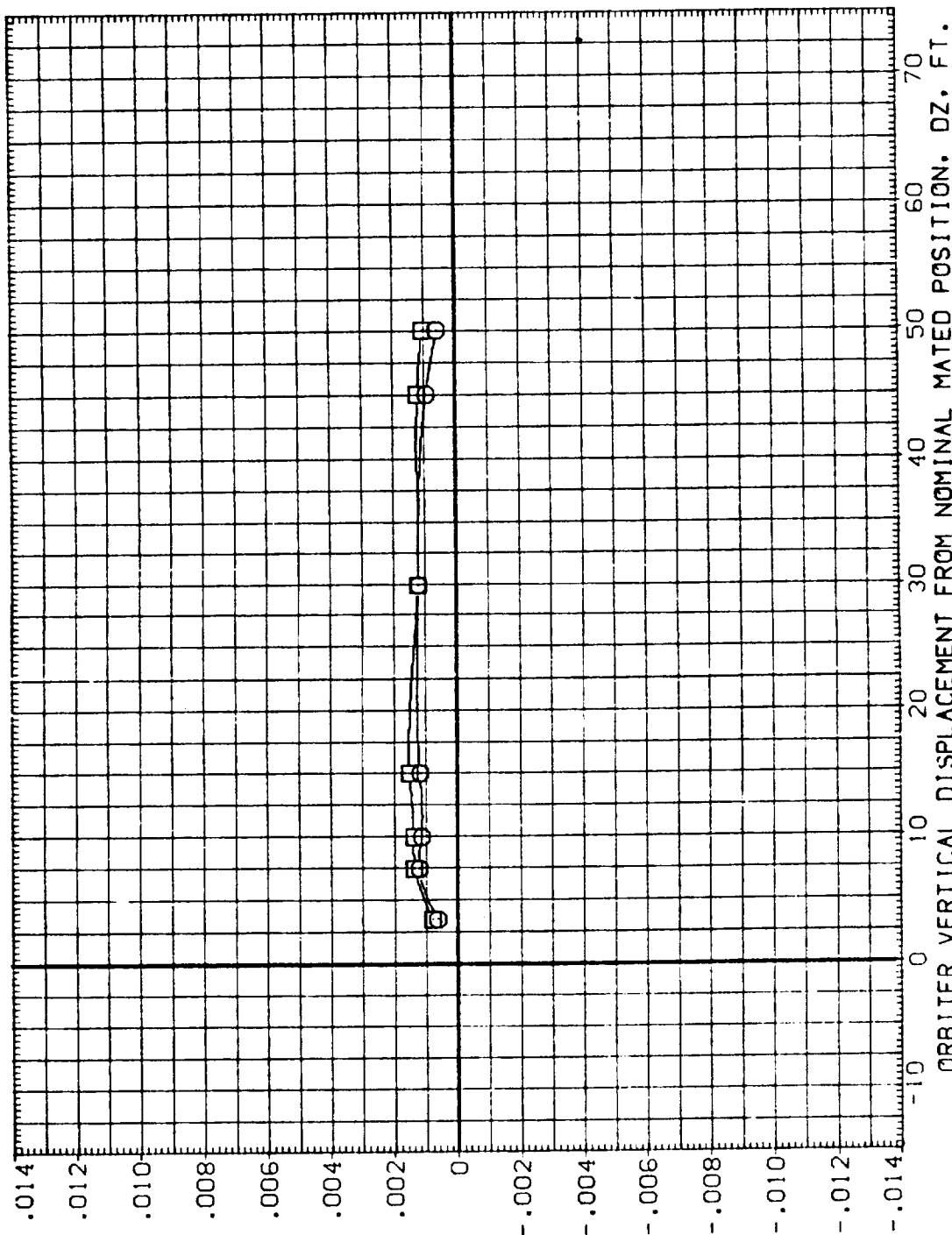


FIG. 50 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)

DATA SET SYMBOL (PNH034)  
(PNH023)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

IORB 6.000  
ELEVON .000  
MACH .600  
STAB 5.000

REFERENCE INFORMATION  
SREF 5500.0000 50.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN.  
YMRP 190.7500 IN.  
ZMRP 190.7500 IN.  
SCALE .0125

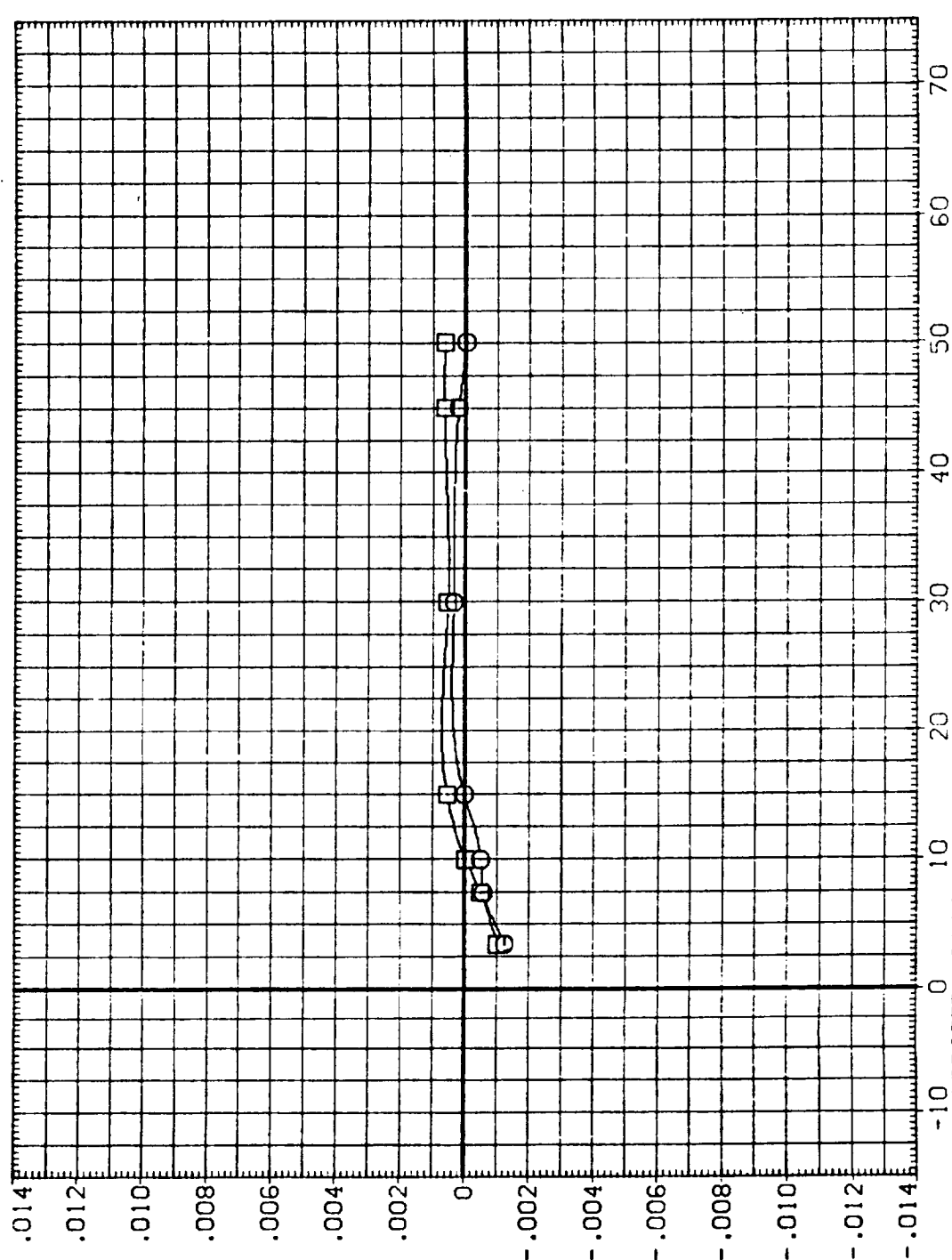


FIG. 50 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)  
(B)ALPHAC= 2.00

REFERENCE INFORMATION	
SREF	5500.0000 SO.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN. XC
XMRP	1339.9000 IN. YC
YMRP	.0000 IN. ZC
ZMRP	190.7500
SCALE	.0125

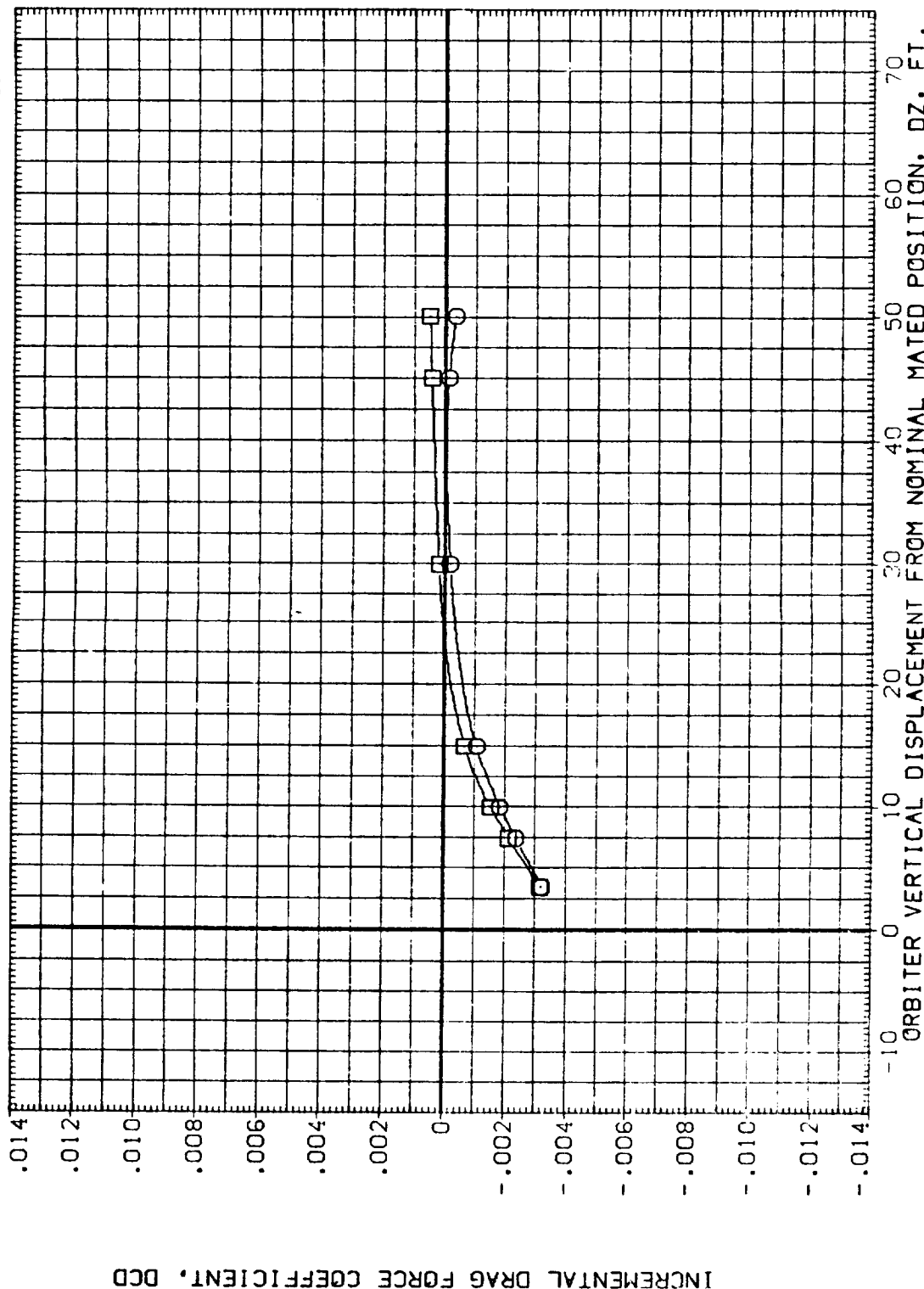


FIG. 50 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)  
(C)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA238) 747/1 AT1 Q3S1 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

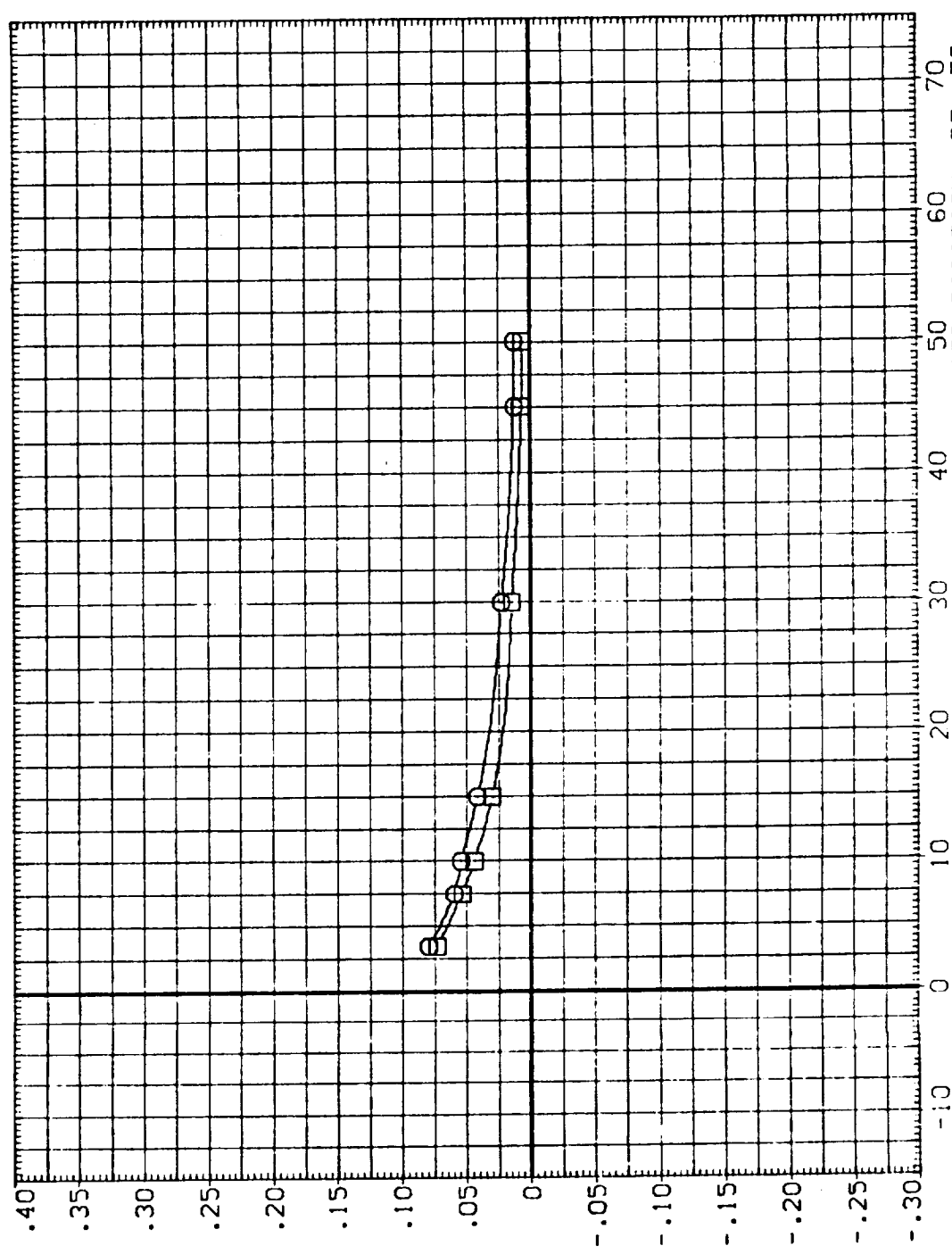


FIG. 50 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)  
 (A) ALPHAC = .00

DATA SET SYMBOL  
(PNH034)  
(PNH023)

CONFIGURATION	DESCRIPTION
ARC 14-120(CA238)	747/1 AT1
ARC 14-120(CA238)	747/1 AT1

03S1 (CARRIER DATA)  
02S1 (CARRIER DATA)

ICRB  
6.000  
6.000

ELEVEN  
0000  
0000

MACH .609

STAB  
5.000  
5.000

REFERENCE INFORMATION	
SREF	5500.0000 SC.F
LREF	327.7800 IN.
BREF	2348.0400 IN.
XMRF	1339.9000 IN.
YMRF	.0000 IN.
ZMRF	190.7500 IN.
SCALE	.0125

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

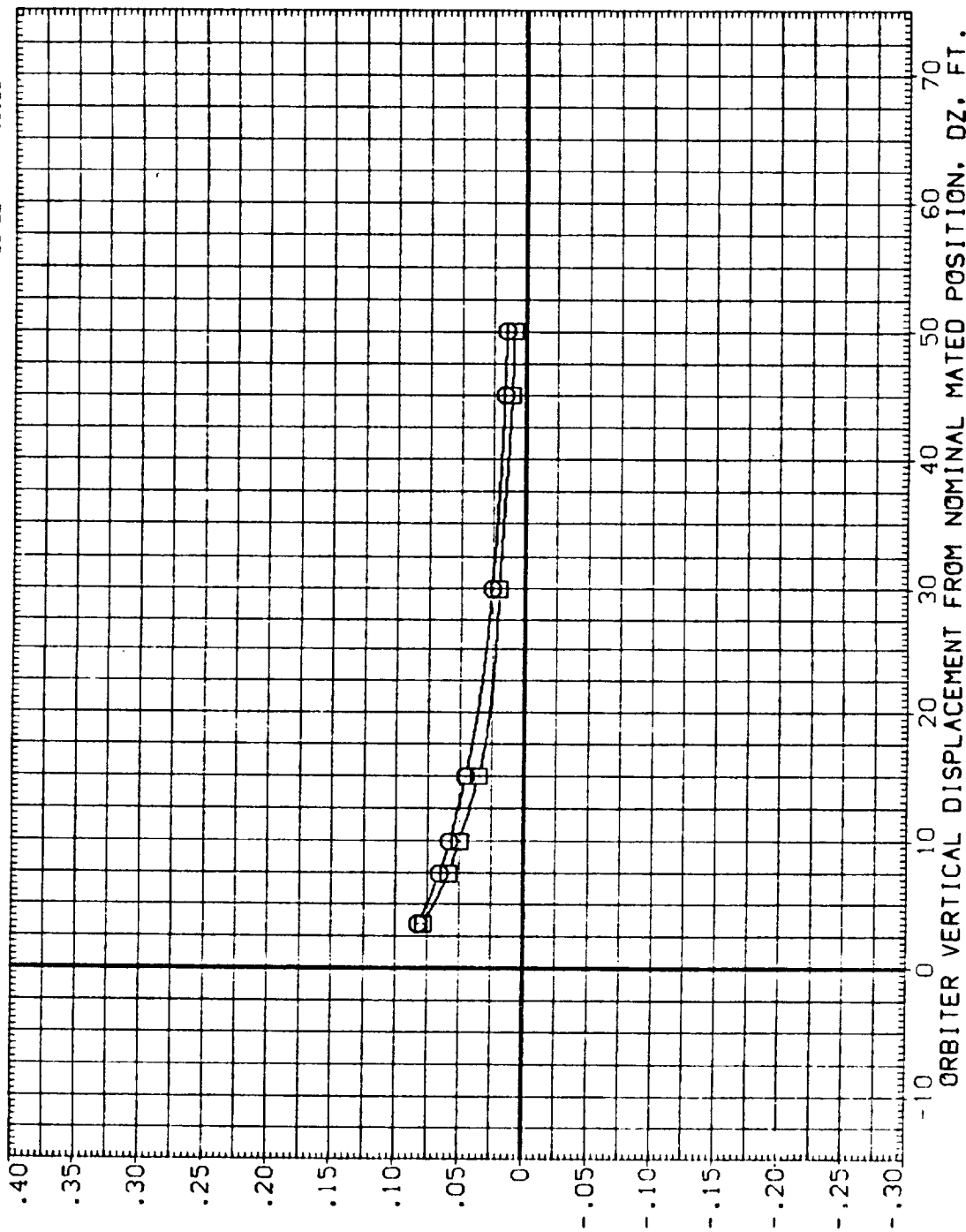
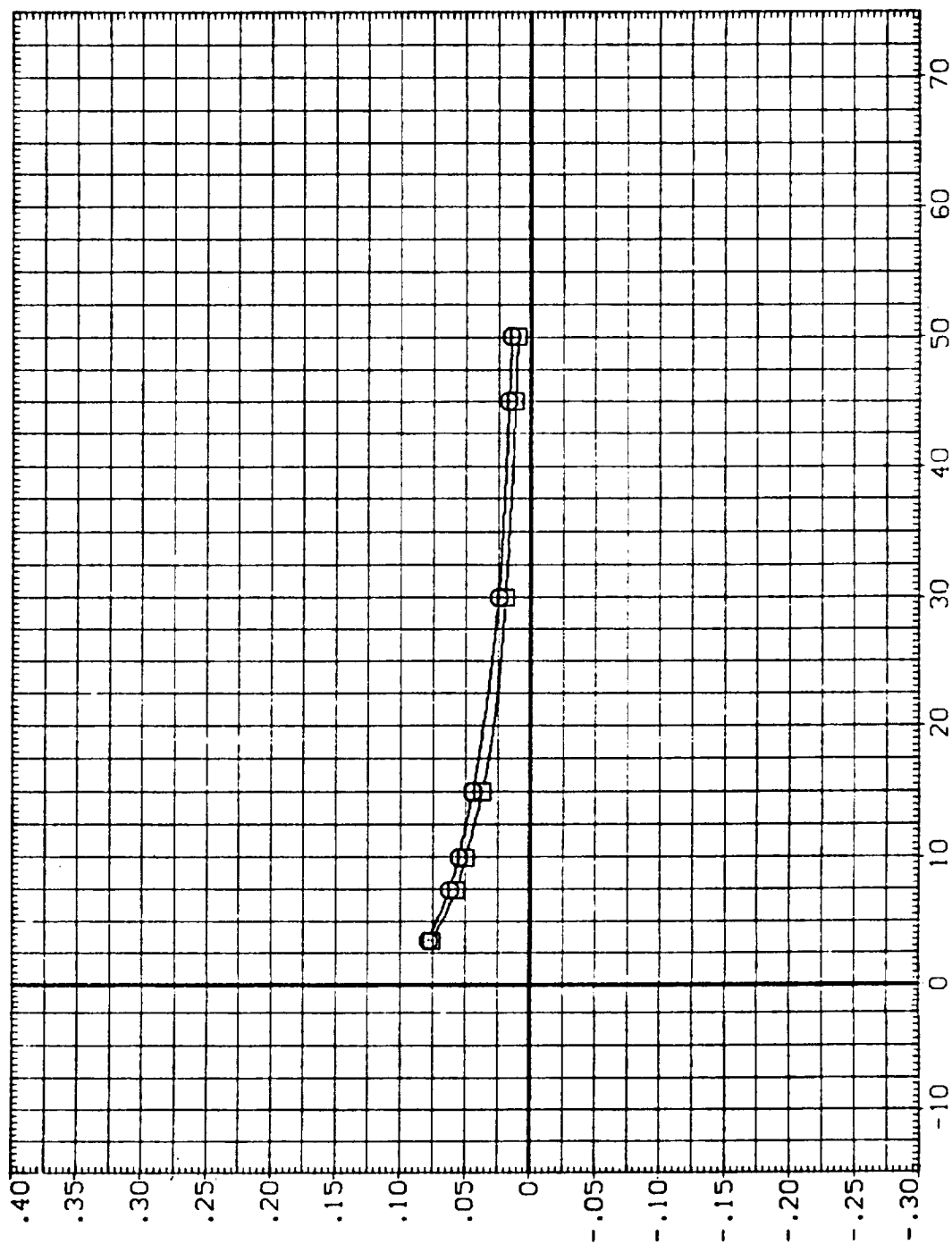


FIG. 50 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)  
(B)ALPHAC= 2.00 PAGE 416

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA238)	6.000	.000	.600	5.000	SREF 5500.0000 SO.FT.
(PNH023)	ARC 14-120(CA238)	6.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 50 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)

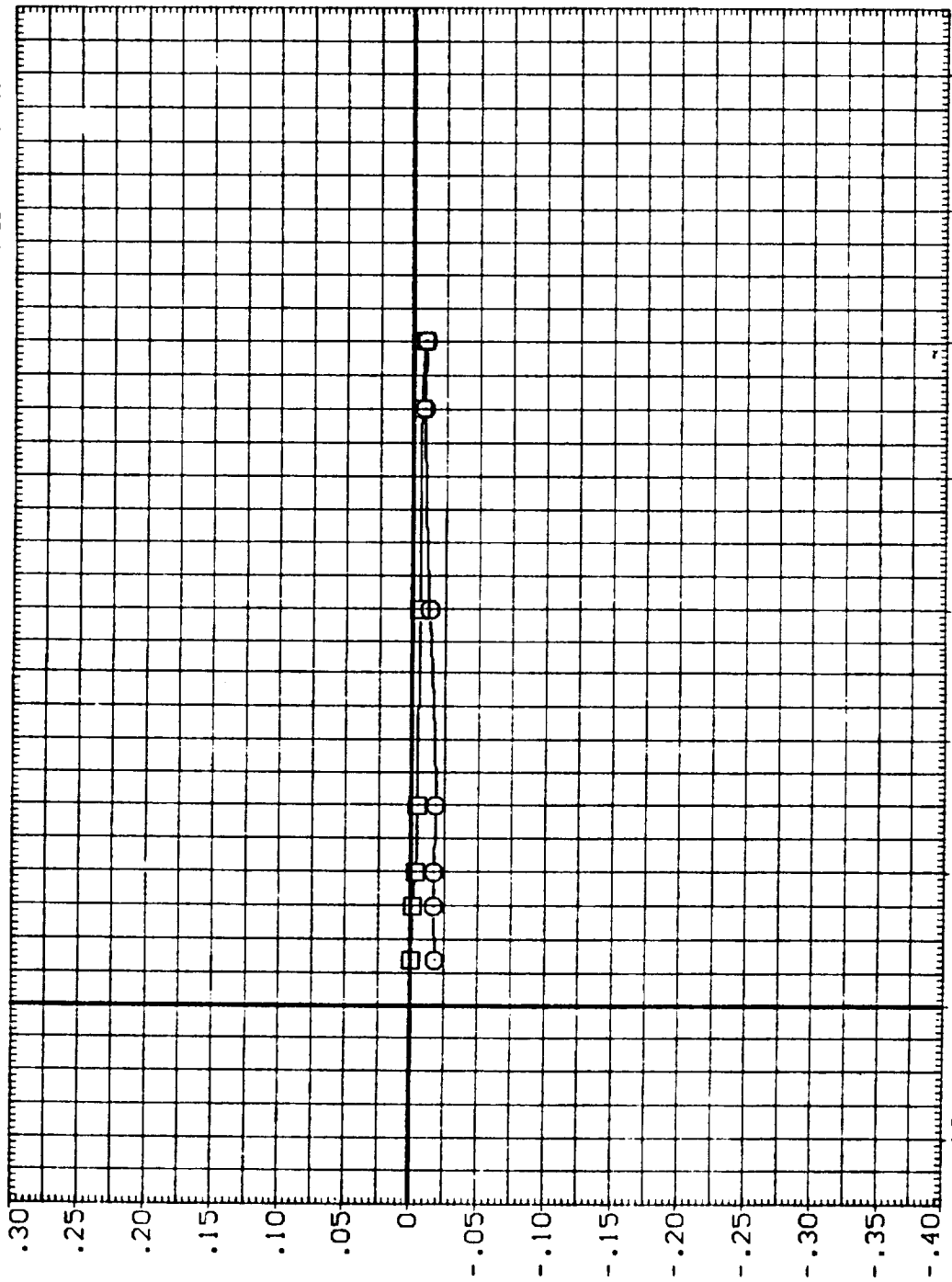
(C)ALPHAC= 4.00

DATA SET SYMBOL (4NH034)  
 (4NH023)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)  
 ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)

IORB ELEVON MACH STAB  
 6.000 .000 .600 5.000  
 6.000 .000 .600 5.000

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 51 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)

(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH023)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

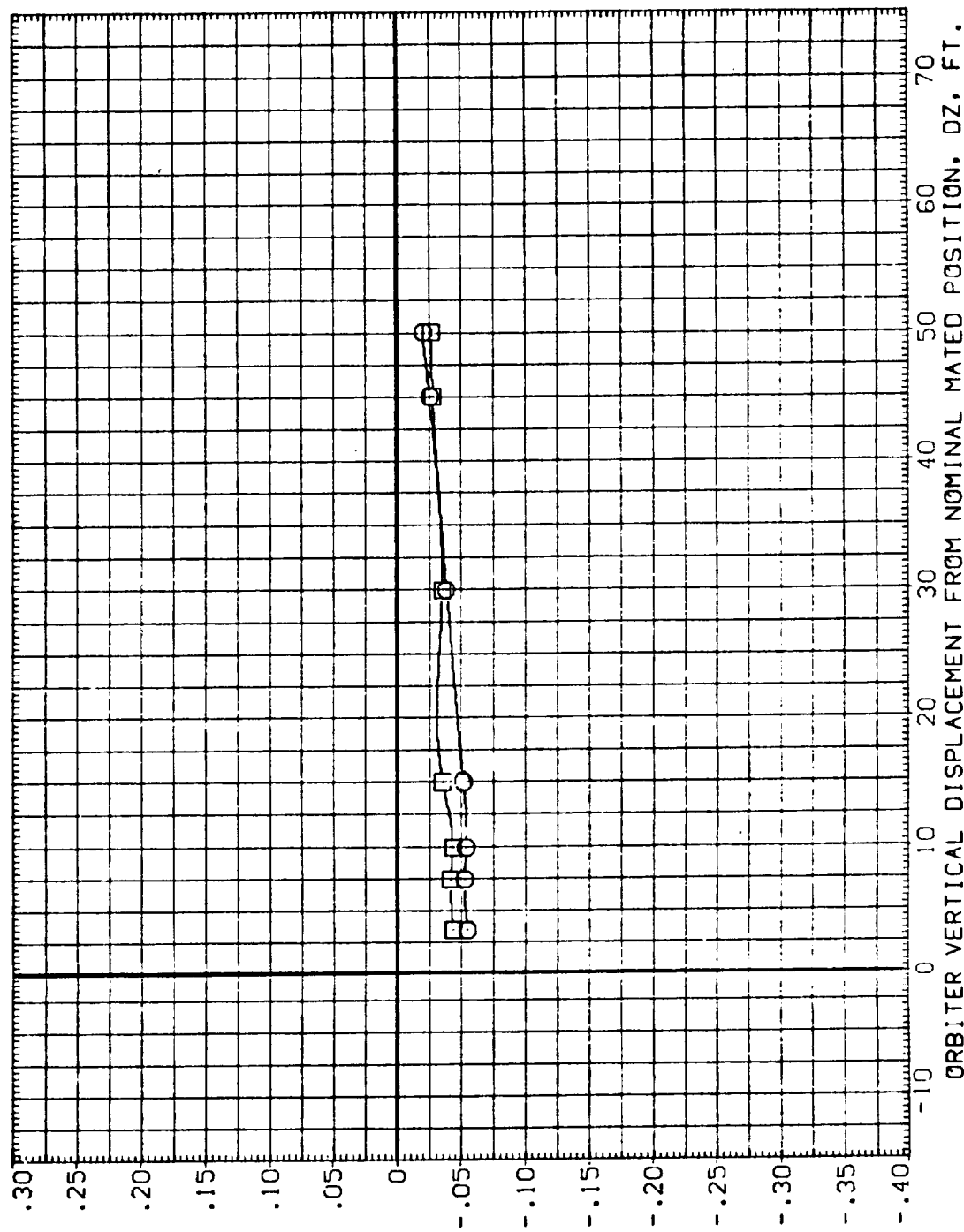


FIG. 51 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)  
 (B)ALPHAC= 2.00 PAGE 419

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(4NH034)  
(4NH023)

ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)

IORB 6.000  
ELEVON .000  
MACH .600  
STAB 5.000

REFERENCE INFORMATION  
SREF 2690.0000 50.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1103.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

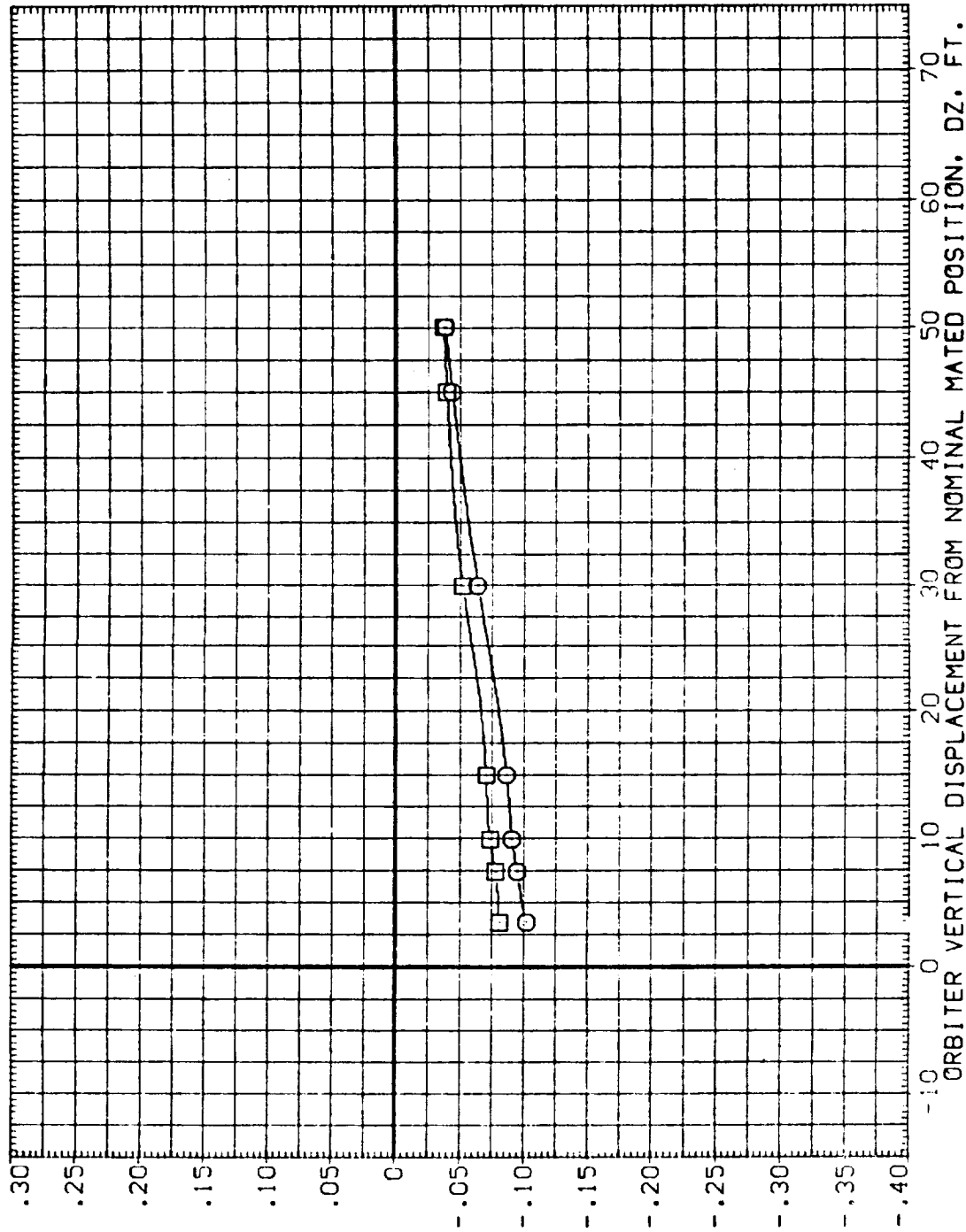


FIG. 51 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG.,IORB=6.0 DEG.,ELEVON= 0)  
(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ. FT.
(4NH023)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN.
						YMRP .0000 IN.
						ZMRP 375.0000 IN.
						SCALE .0125

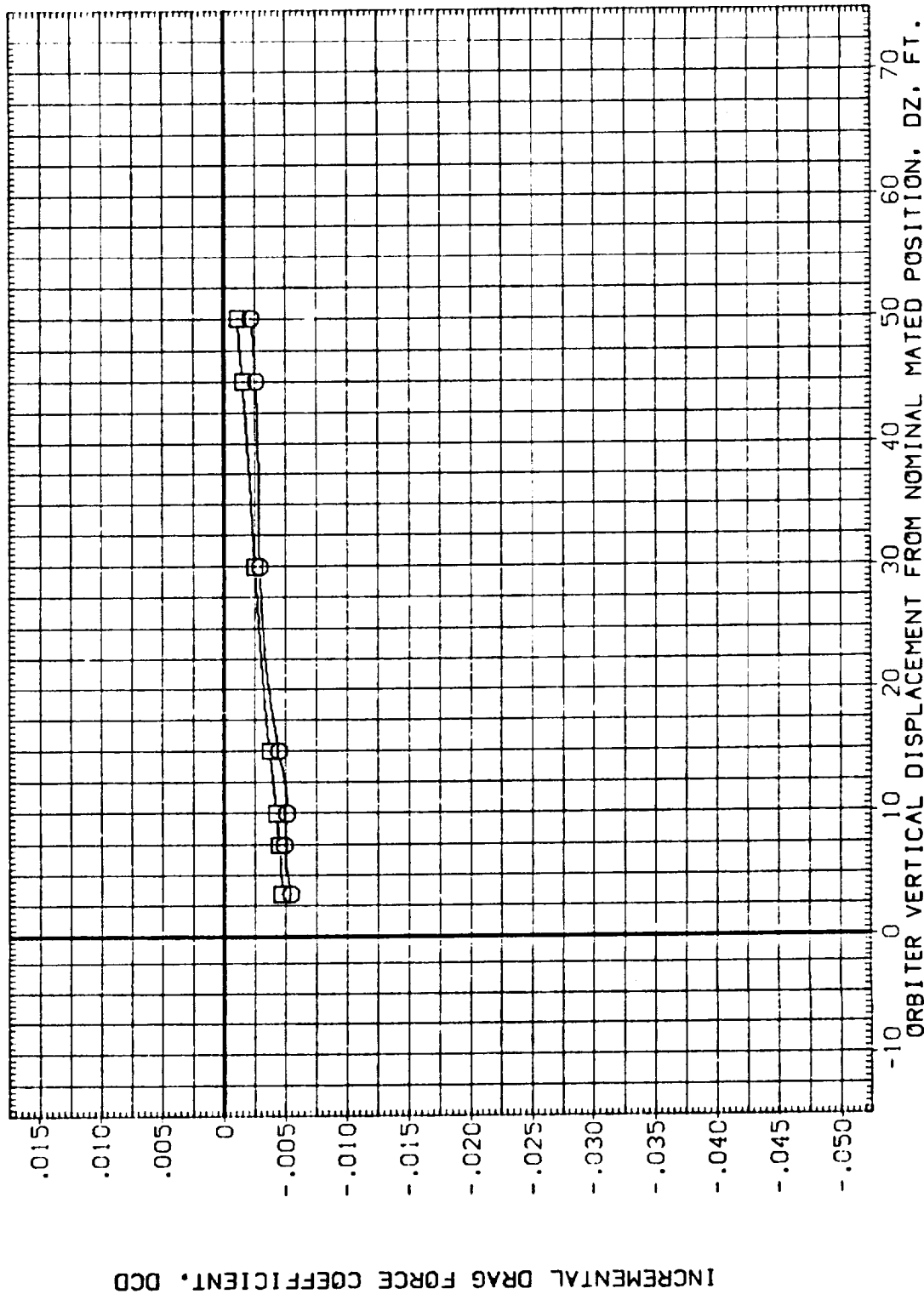


FIG. 51 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IOB=6.0 DEG., ELEVON= 0)  
 (A)A\_PHAC= .00 PAGE 421

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (4NH034)    [ ]    ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)  
 (4NH023)    [ ]    ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)

ORBITER    ELEVON    MACH    STAB    REFERENCE INFORMATION  
 6.000    .000    .600    5.000    SREF 2690.0000 SO.FT.  
 6.000    .000    .600    5.000    LREF 474.8100 IN.  
 6.000    .000    .600    5.000    BREF 936.6800 IN.  
 6.000    .000    .600    5.000    XMRP 1109.0000 IN.  
 6.000    .000    .600    5.000    YMRP 375.0000 IN.  
 6.000    .000    .600    5.000    ZMRP 375.0000 IN.  
 6.000    .000    .600    5.000    SCALE .0125

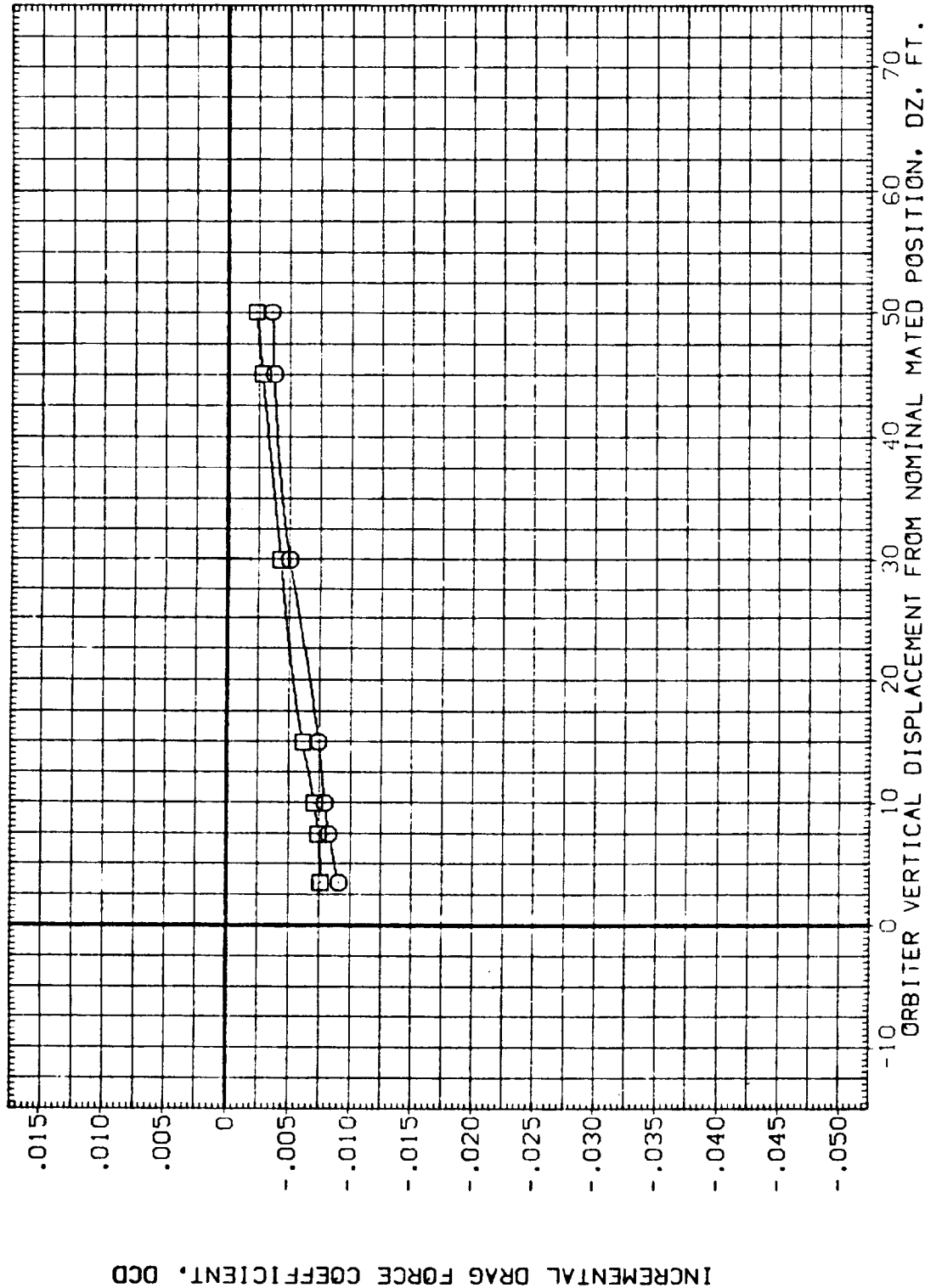


FIG. 51 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG.,IORB=6.0 DEG.,ELEVON= 0)  
 (B)ALPHAC= 2.00    PAGE 422



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ICRB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH023)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

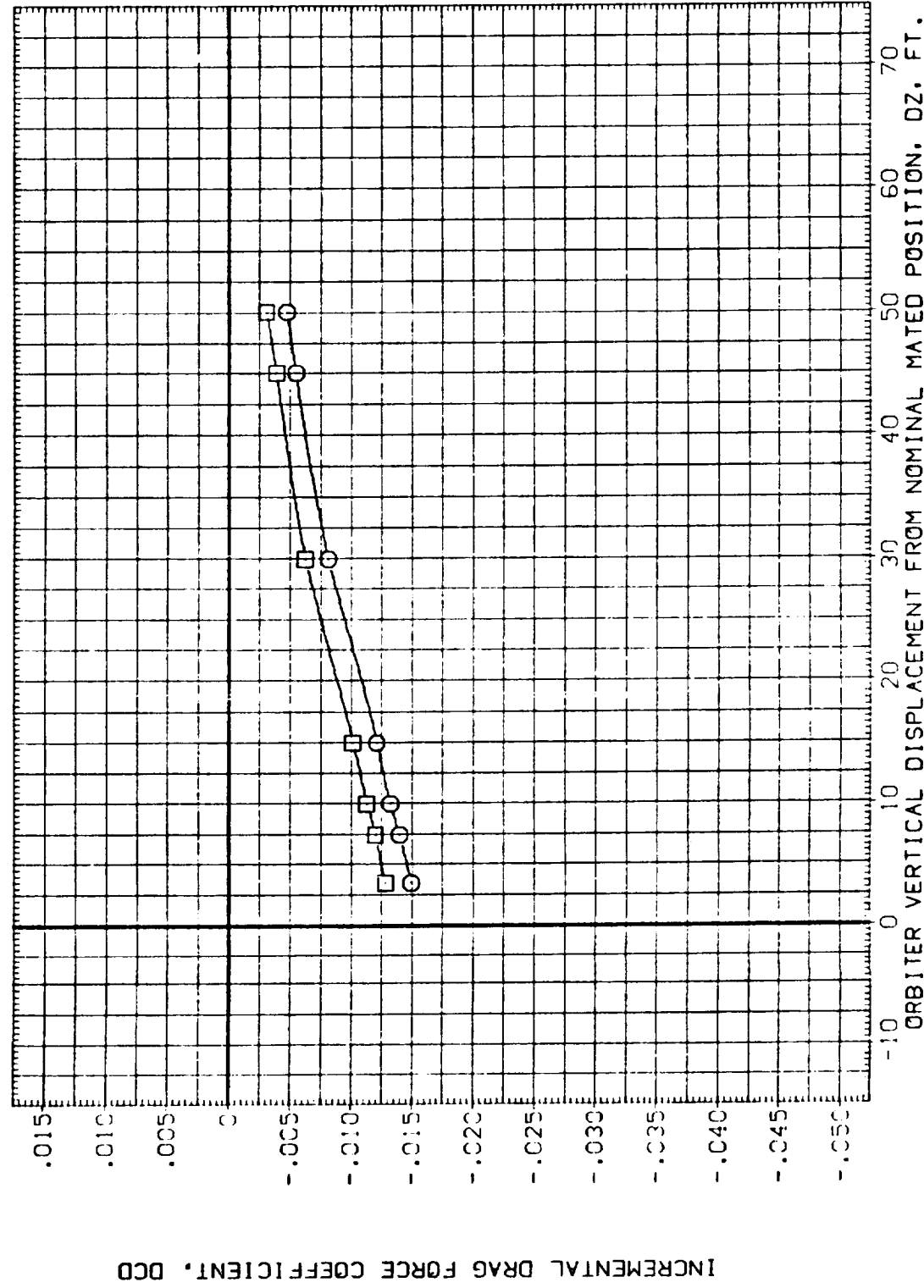


FIG. 51 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG.,ICRB=6.0 DEG.,ELEVON= 0)

CALCULATED 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA238)	747/1 AT1	0351 (ORBITER DATA)	6.000	5.000	SREF 2690.0000 50.FT.
(4NH023)	ARC 14-120(CA238)	747/1 AT1	0251 (ORBITER DATA)	6.000	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

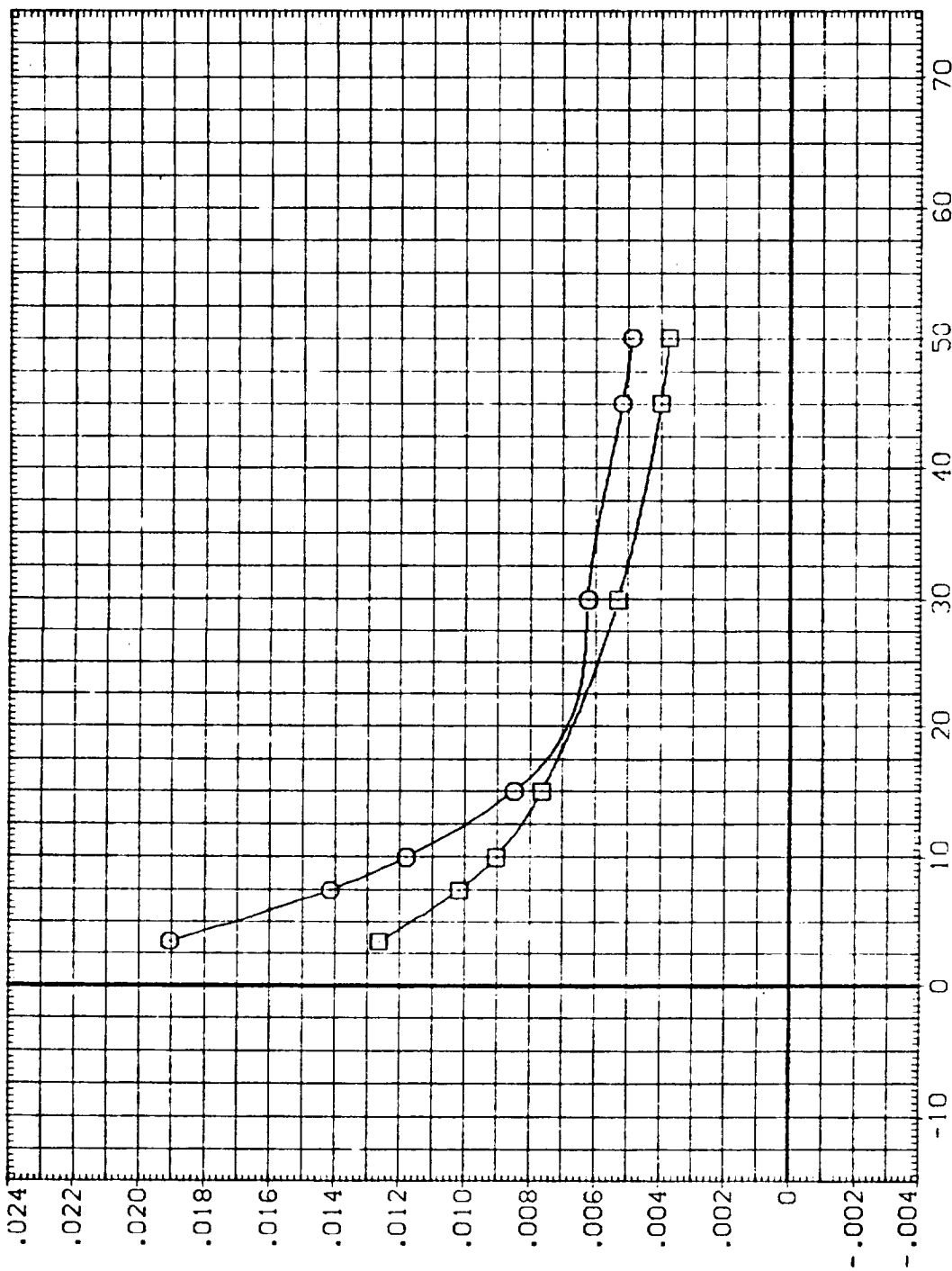
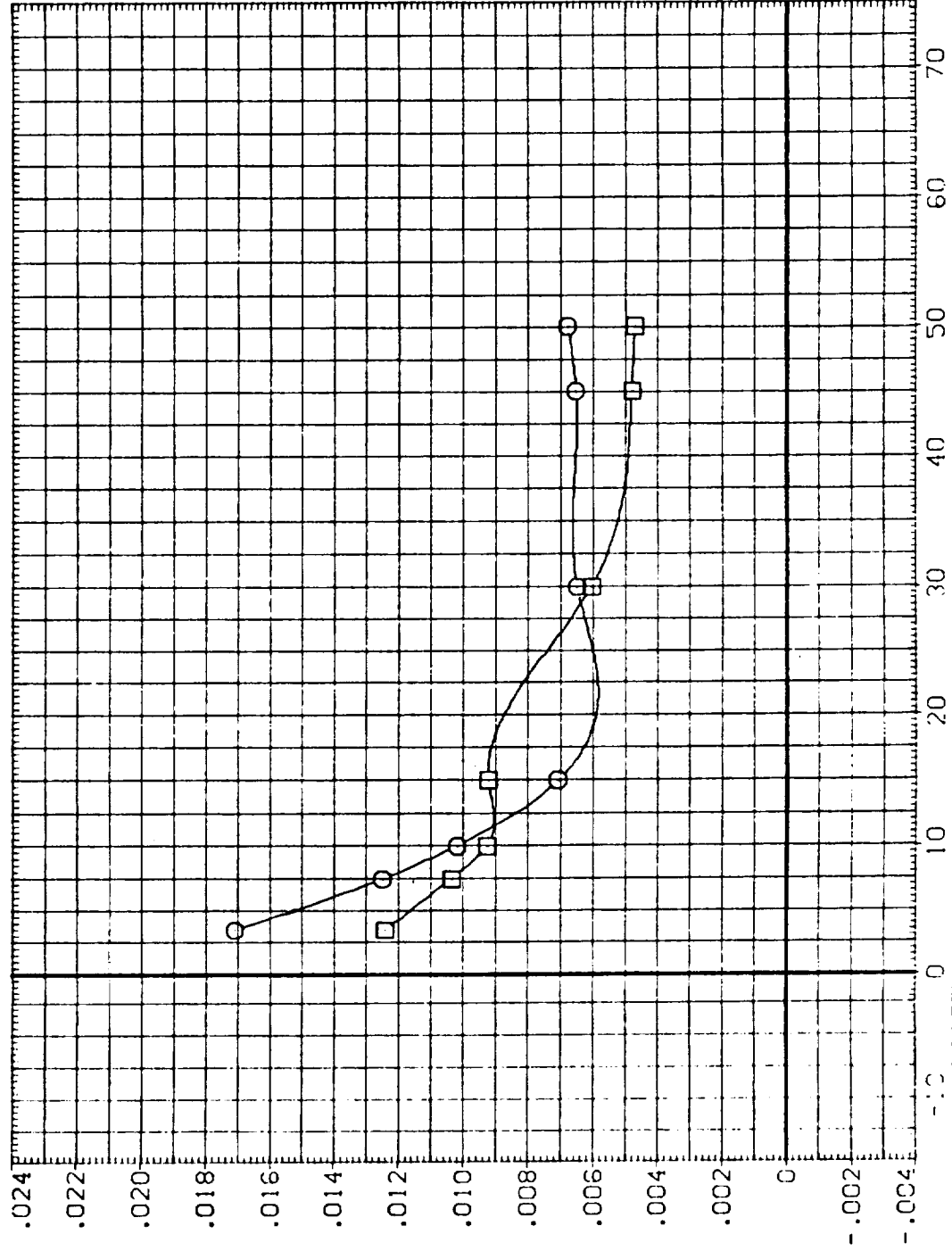


FIG. 51 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)  
 (A) ALPHAC= .00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (4NH034)    [ ]    ARC 14-120(CA238) 747/1 AT1 Q3S1 (ORBITER DATA)  
 (4NH023)    [ ]    ARC 14-120(CA238) 747/1 AT1 Q2S1 (ORBITER DATA)

IORB    ELEVON    MACH    STAB  
 6.000    .000    .600    5.000  
 6.000    .000    .600    5.000

REFERENCE INFORMATION  
 SREF 2690.0000 50.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 51 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG.,IORB=6.0 DEG.,ELEVON= 0)

DATA SET SYMBOL  
(4NH034)  
(4NH023)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)

IORB 6.000  
ELEVON .000  
MACH .600  
STAB 5.000

REFERENCE INFORMATION  
SREF 2690.0000 SO.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. XO  
YMRP .0000 IN. YO  
ZMRP 375.0000 IN. ZO  
SCALE .0125

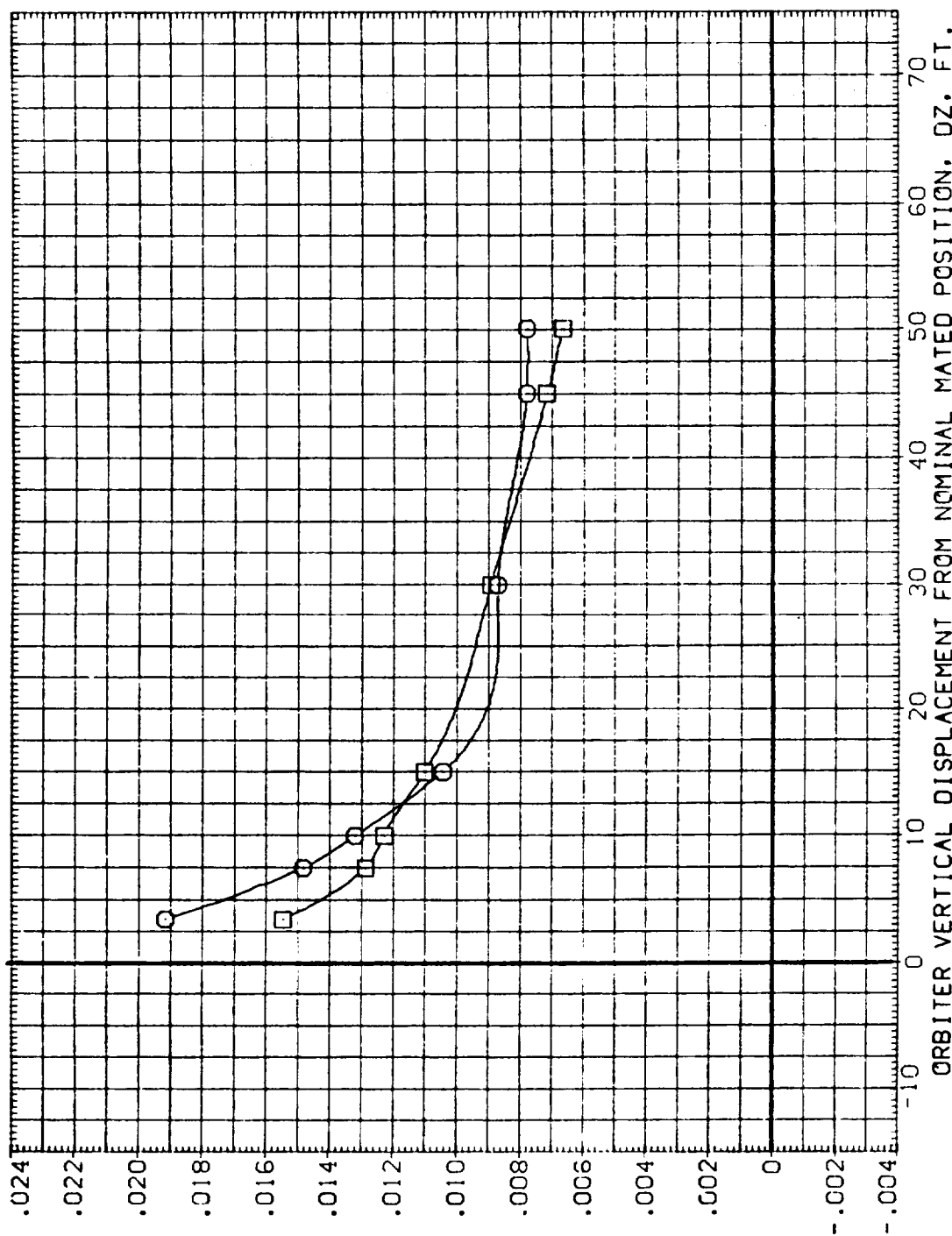


FIG. 51 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 0)  
(C)ALPHAC= 4.00

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DATA SET SYMBOL      CONFIGURATION DESCRIPTION  
 (PIN027)      ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
 (PIN022)      ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

IORB      ELEVON      MACH      STAB  
 8.000      .000      .600      5.000  
 8.000      .000      .600      5.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

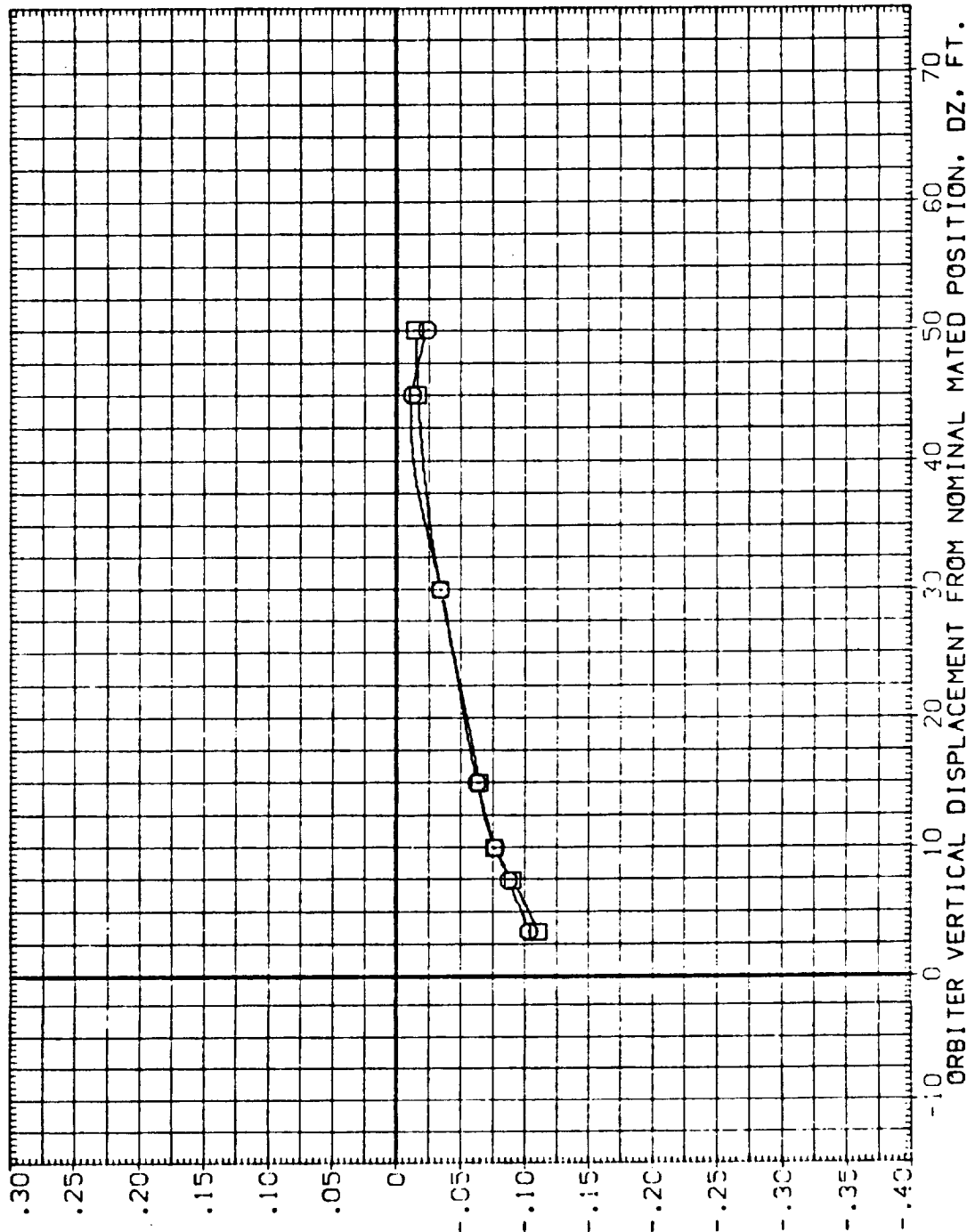


FIG. 52 EFFECT OF ORBITER TAILCONE ON CARRIER(IORB= 8.0 DEG.)

(CALCULATED) .00

DATA SET SYMBOL (PNH027)  
 (PNH022)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
 ARC 14-120(CA239) 747/1 AT1 0251 (CARRIER DATA)

IOBP ELEVON MACH STAB  
 8.000 .000 .600 5.000  
 8.000 .000 .600 5.000

REFERENCE INFORMATION  
 SREF 5500.0000 50.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

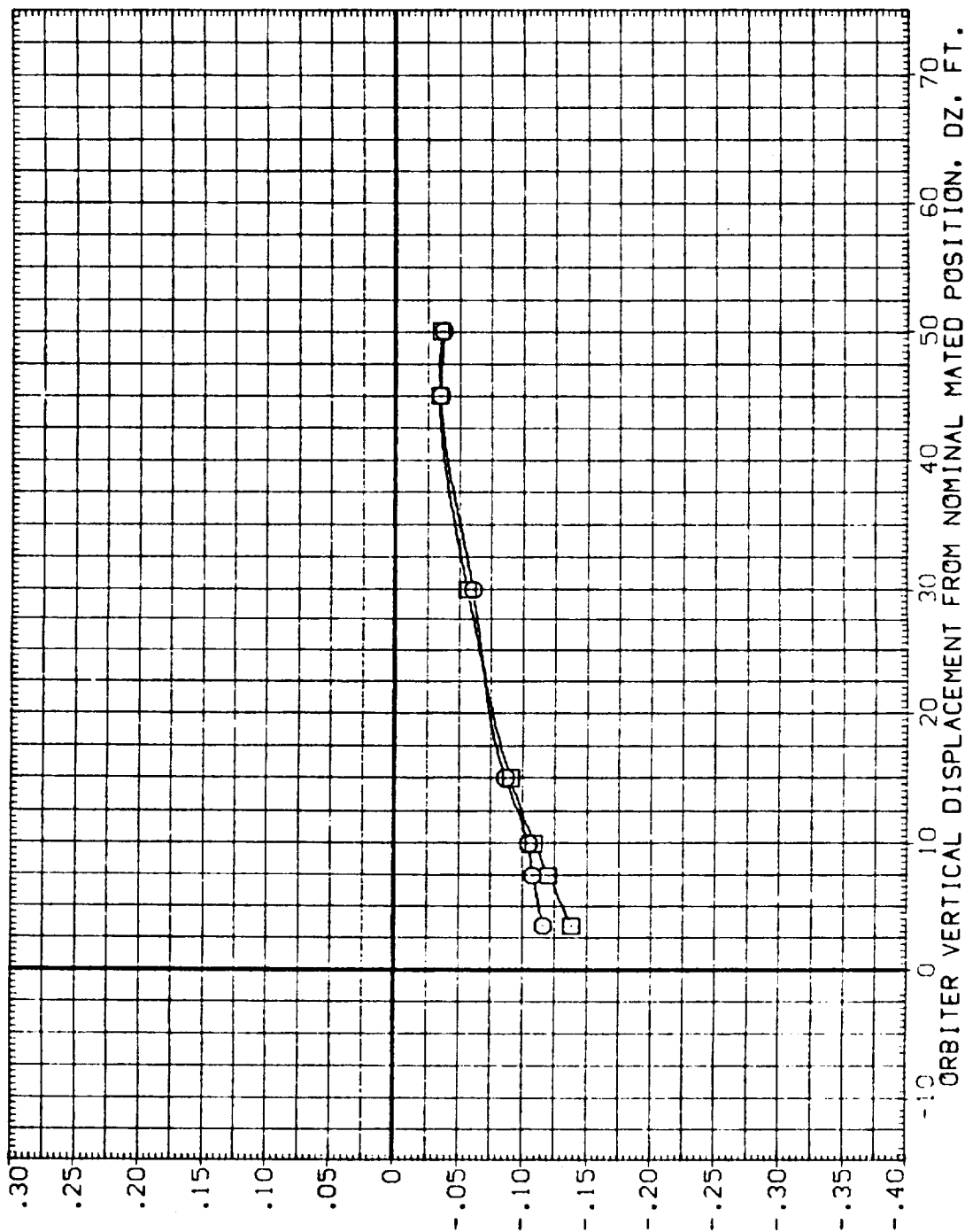


FIG. 52 EFFECT OF ORBITER TAILCONE ON CARRIER (IOBP= 8.0 DEG.)  
 (B)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNH027) ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
 (PNH022) ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 8.000 .000 .600 5.000 SREF 5500.0000 SQ.FT.  
 8.000 .000 .600 5.000 LREF 327.7800 IN.  
 XHRP 2348.0400 IN. XC  
 YMRP 1339.9000 IN. YC  
 ZMRP .0000 IN. ZC  
 SCALE .0125

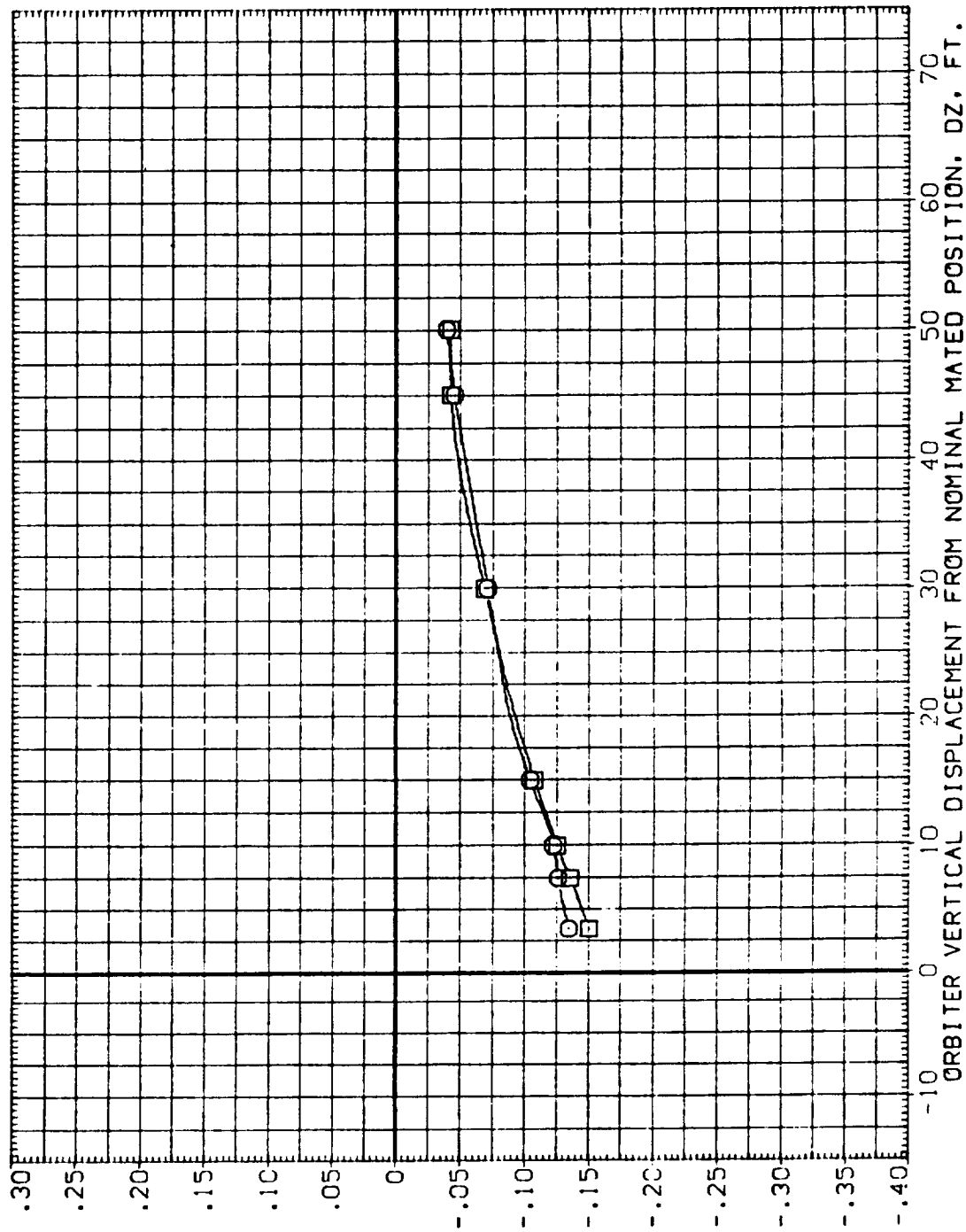




FIG. 52 EFFECT OF ORBITER TAILCONE ON CARRIER (IORB= 8.0 DEG.)

COALPHAC= 4.00

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(PNH027)  ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
(PNH022)  ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

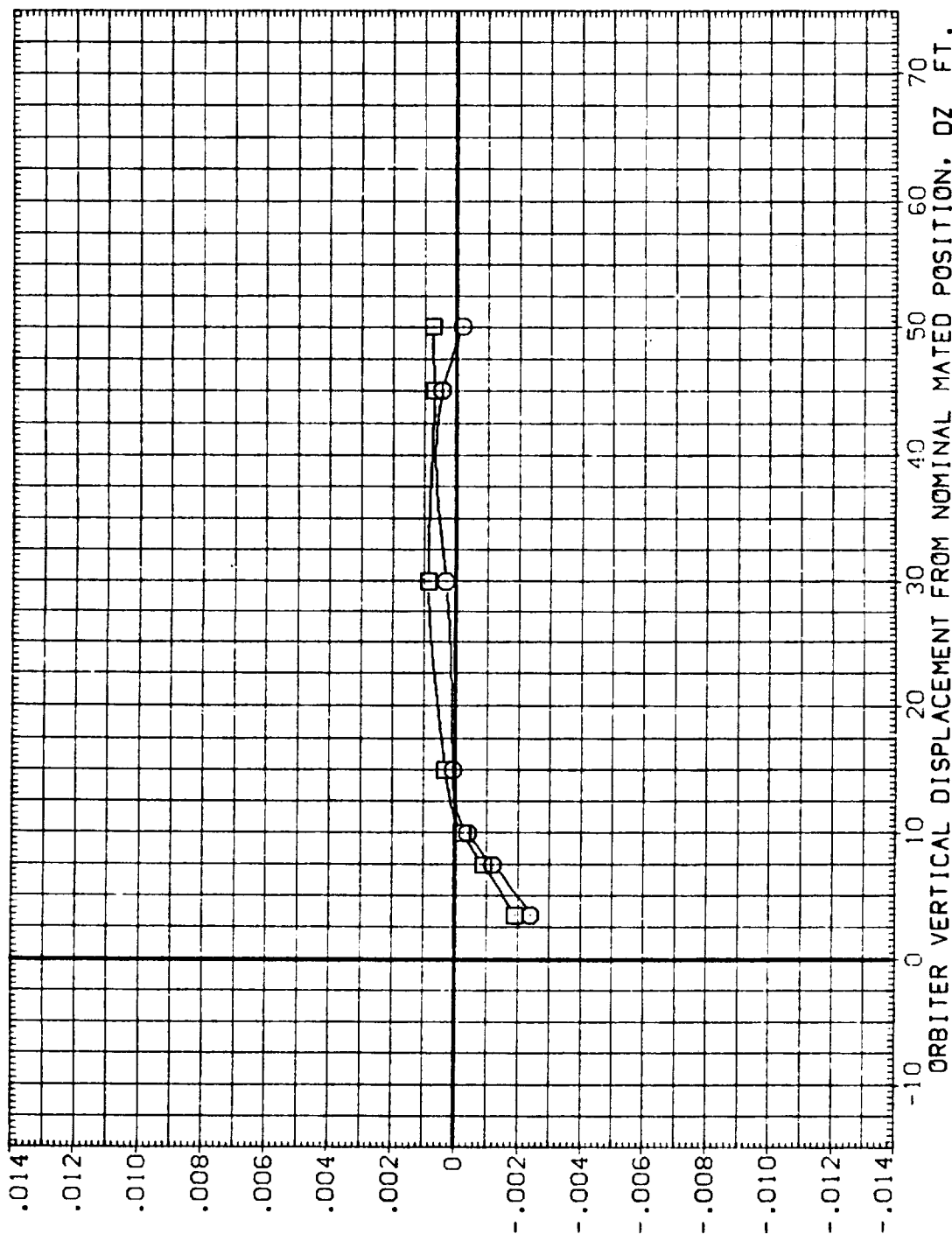


FIG. 52 EFFECT OF ORBITER TAILCONE ON CARRIER(IORB= 8.0 DEG.)

(A)ALPHAC= .00



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(PNH027) ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
 (PNH022) ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

IORB

8.000  
 8.000

ELEVON

.000  
 .000

MACH

.600  
 .600

STAB

5.000  
 5.000

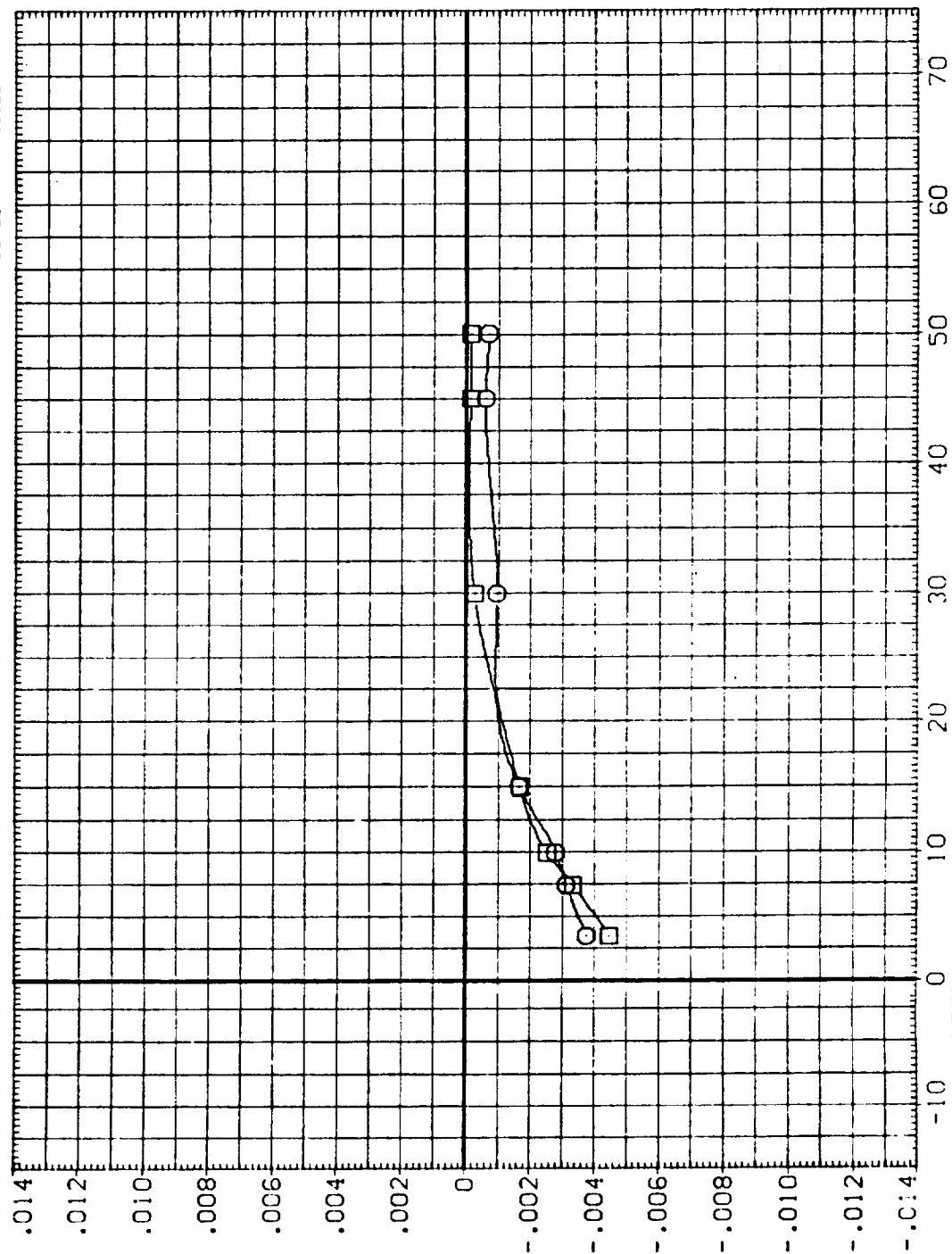


FIG. 52 EFFECT OF ORBITER TAILCONE ON CARRIER (IORB= 8.0 DEG.)

(B)ALP-HAC= 2.00

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		IORB		ELEVON		MACH		STAB		REFERENCE INFORMATION	
(PNH027)		ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)		8.000		.000		.600		5.000		SREF 5500.0000 50.FT.	
(PNH022)		ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)		8.000		.000		.600		5.000		LREF 327.7800 IN.	
												BREF 2348.0400 IN.	
												XMRP 1339.9000 IN. XC	
												YMRP .0000 IN. YC	
												ZMRP 190.7500 IN. ZC	
												SCALE .0125	

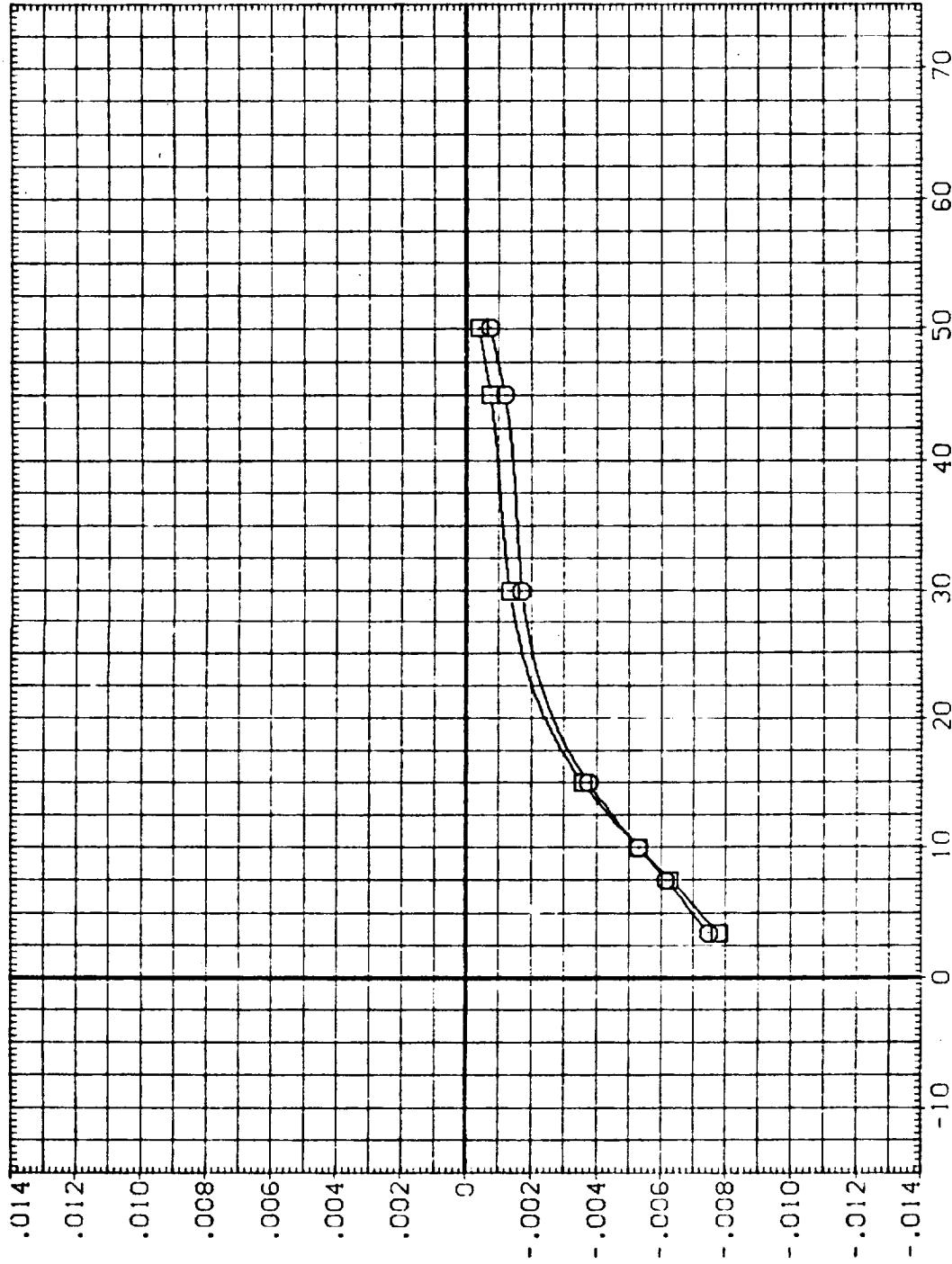


FIG. 52 EFFECT OF ORBITER TAILCONE ON CARRIER(IORB= 8.0 DEG.)

(C) A<sub>P</sub>-AC= 4.00

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DATA SET SYMBOL (PNH027) (PNH022) B

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
 ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

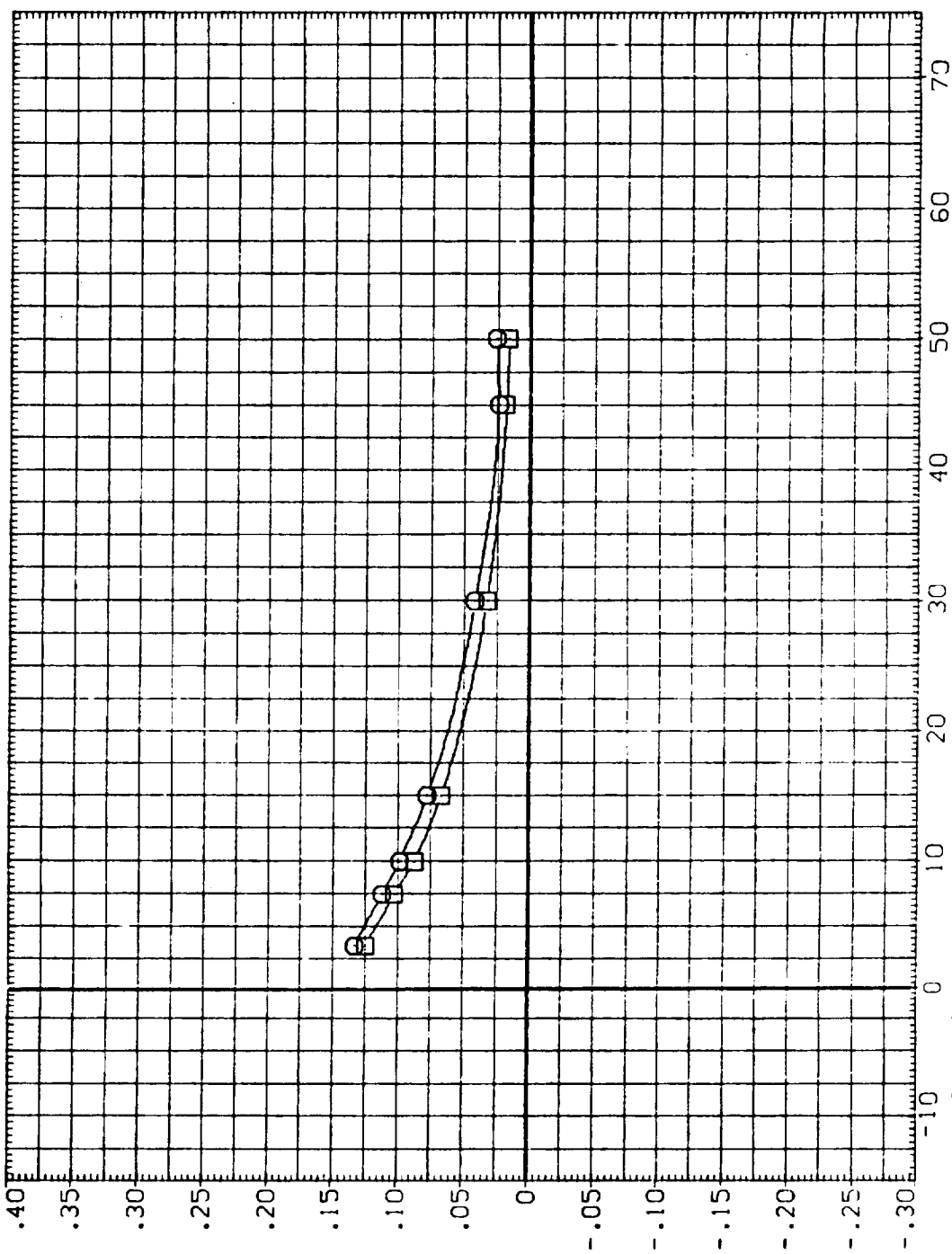
IORB 8.000 8.000

ELEVON .000 .000

MACH .600 .600

STAB 5.000 5.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 52 EFFECT OF ORBITER TAILCONE ON CARRIER (IORB= 8.0 DEG.)

CALPHAC= .00

DATA SET SYMBOL (PNH027) (PNH022)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

IORB 8.000  
ELEVON .000  
MACH .600  
STAB 5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN.  
YMRP .0000 IN.  
ZMRP 190.7500 IN.  
SCALE .0125

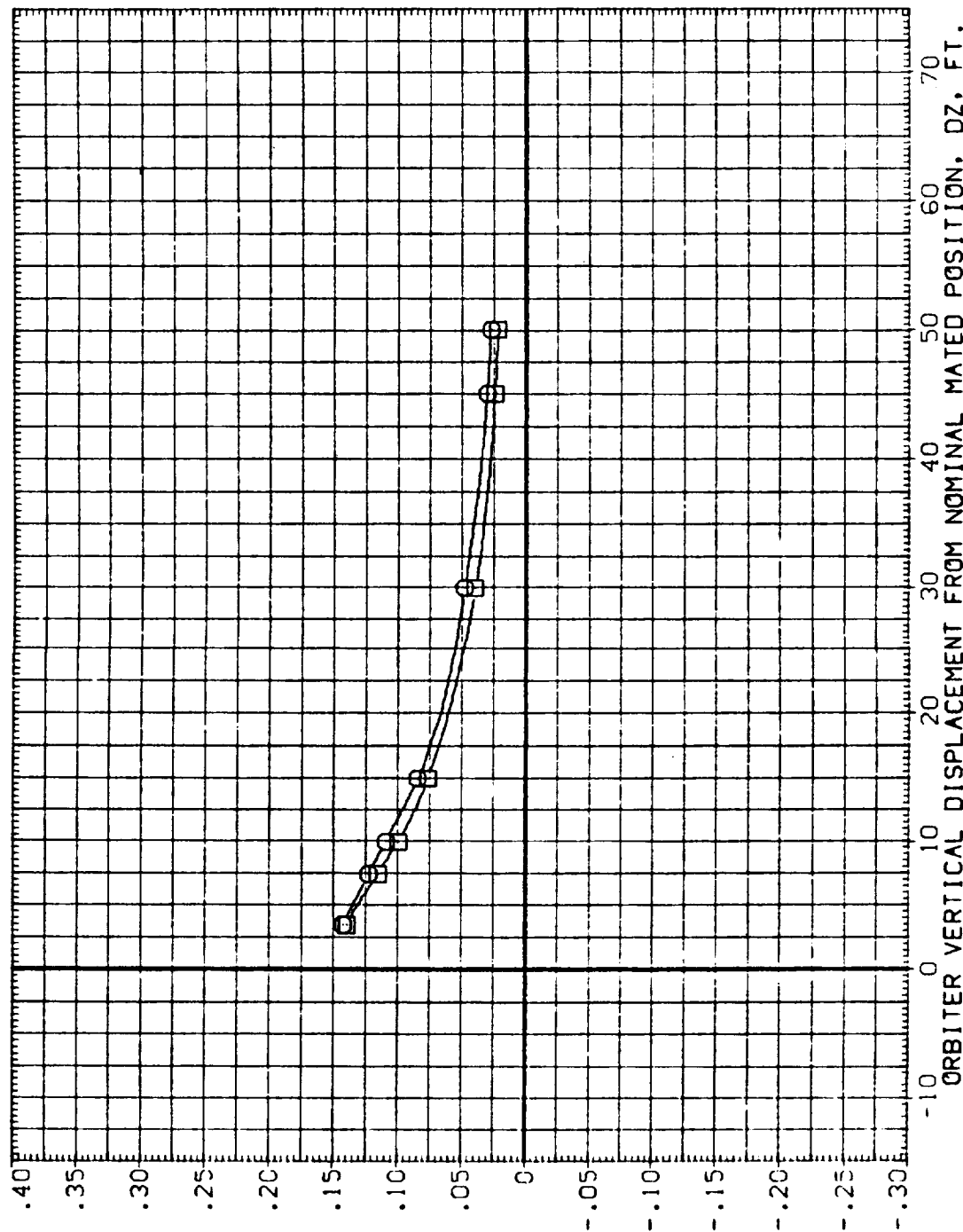
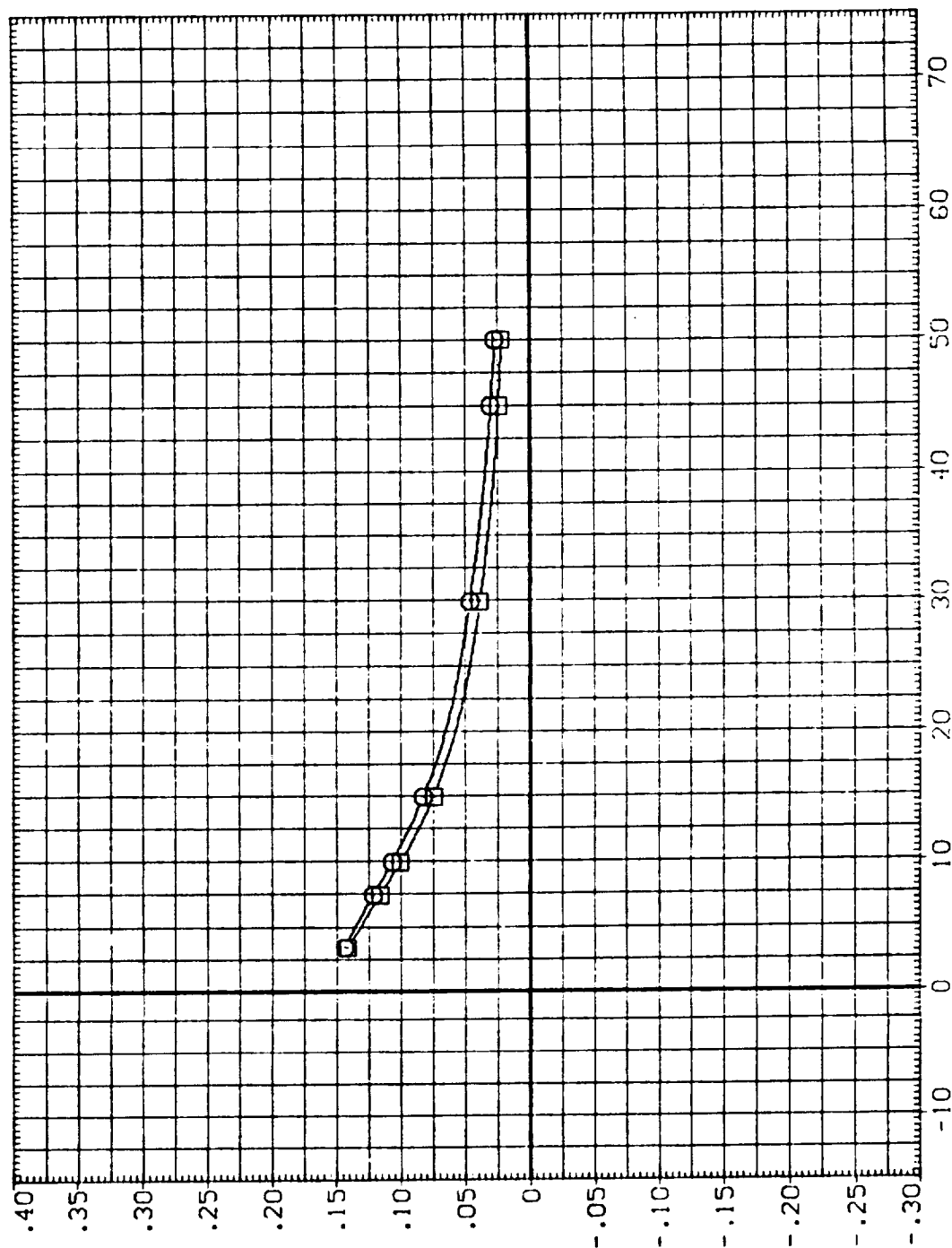


FIG. 52 EFFECT OF ORBITER TAILCONE ON CARRIER (IORB= 8.0 DEG.)

(B)ALP=PC= 2.00

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH027)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	8.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH022)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	8.000	.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						YMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						ZMRP 190.7500 IN ZC
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 52 EFFECT OF ORBITER TAILCONE ON CARRIER (IORB= 8.0 DEG.)

(C)ALPHAC= 4.00

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH027)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	8.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH022)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

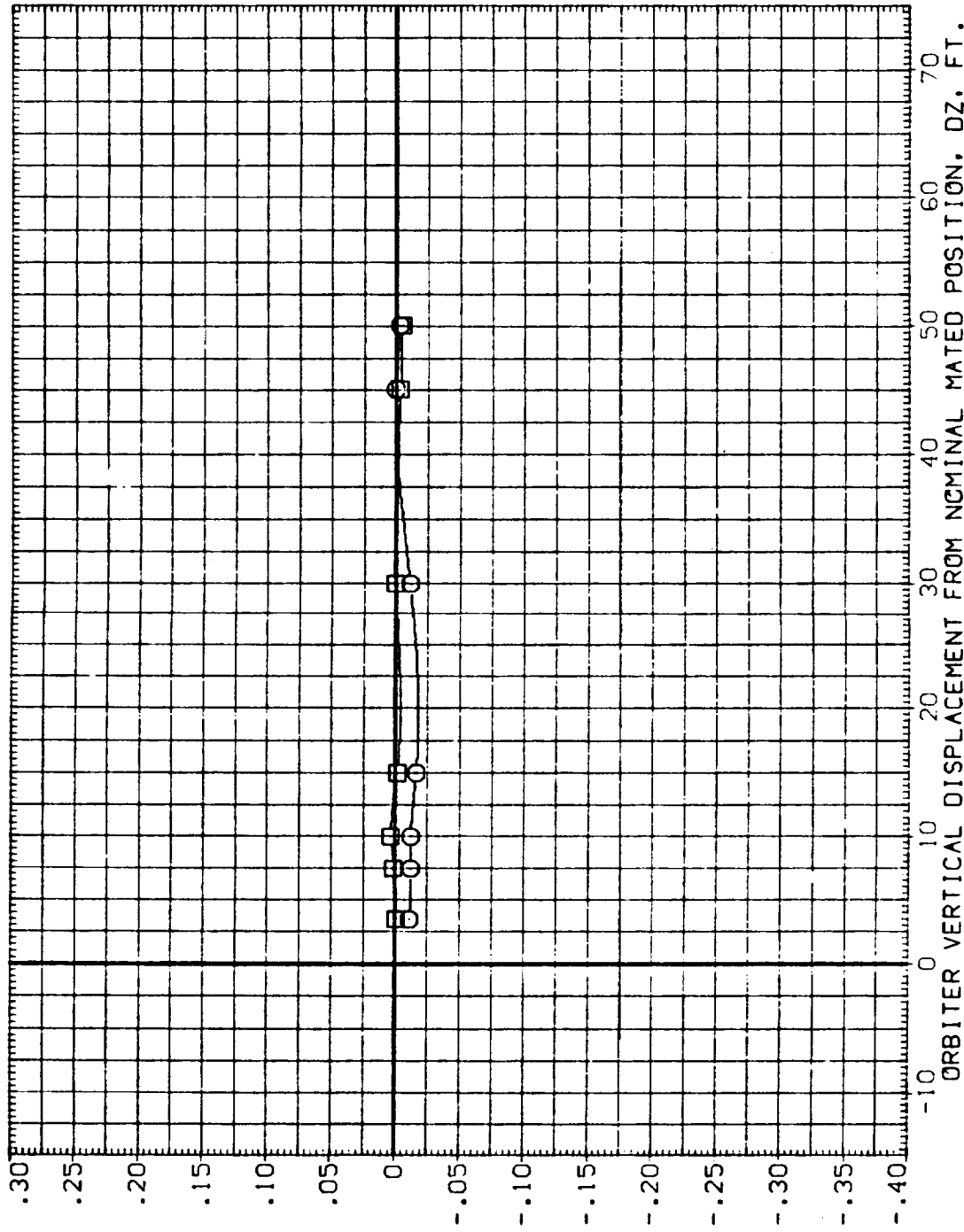


FIG. 53 EFFECT OF ORBITER TAILCONE ON ORBITER (IORB= 8.0 DEG.)

(A) ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH027)	ARC 14-120(CA238)	8.000	.000	.600	5.000	SREF 2690.0000 SO.FT.
(4NH022)	ARC 14-120(CA238)	8.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

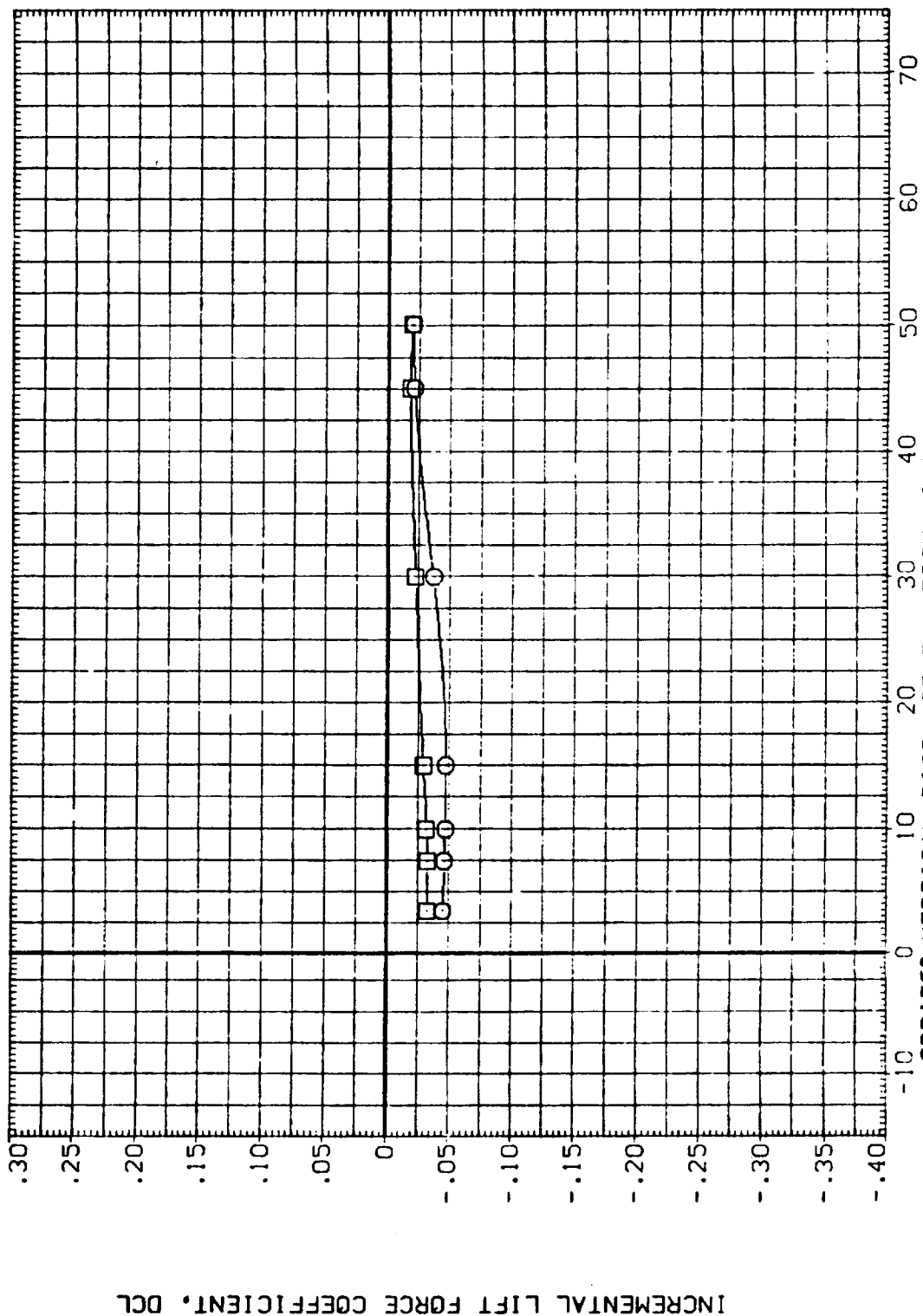


FIG. 53 EFFECT OF ORBITER TAILCONE ON ORBITER(10RB= 8.0 DEG.)

(B)ALPHAC= 2.00

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XRMP	1109.0000 IN. X0
YMRP	.0000 IN. Y0
ZMRP	375.0000 IN. Z0
SCALE	.0125

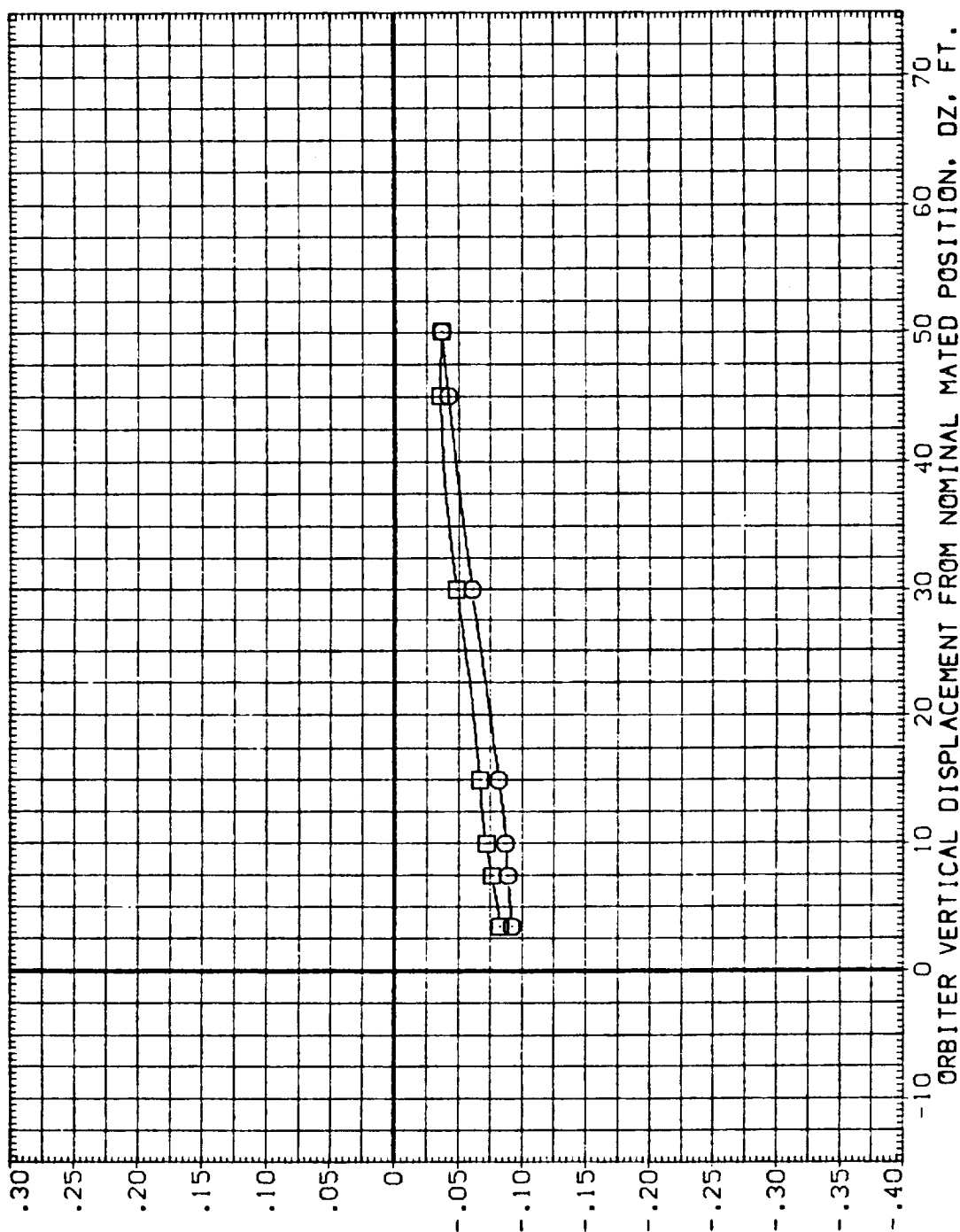


FIG. 53 EFFECT OF ORBITER TAILCONE ON ORBITER(IORB= 8.0 DEG.)

(C)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH027)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	8.000	.000	.600	5.000	SREF 2690.0000 SO.FT.
(4NH022)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	8.000	.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. XG
						YMRP .0000 IN. YG
						ZMRP 375.0000 IN. ZG
						SCALE .0125

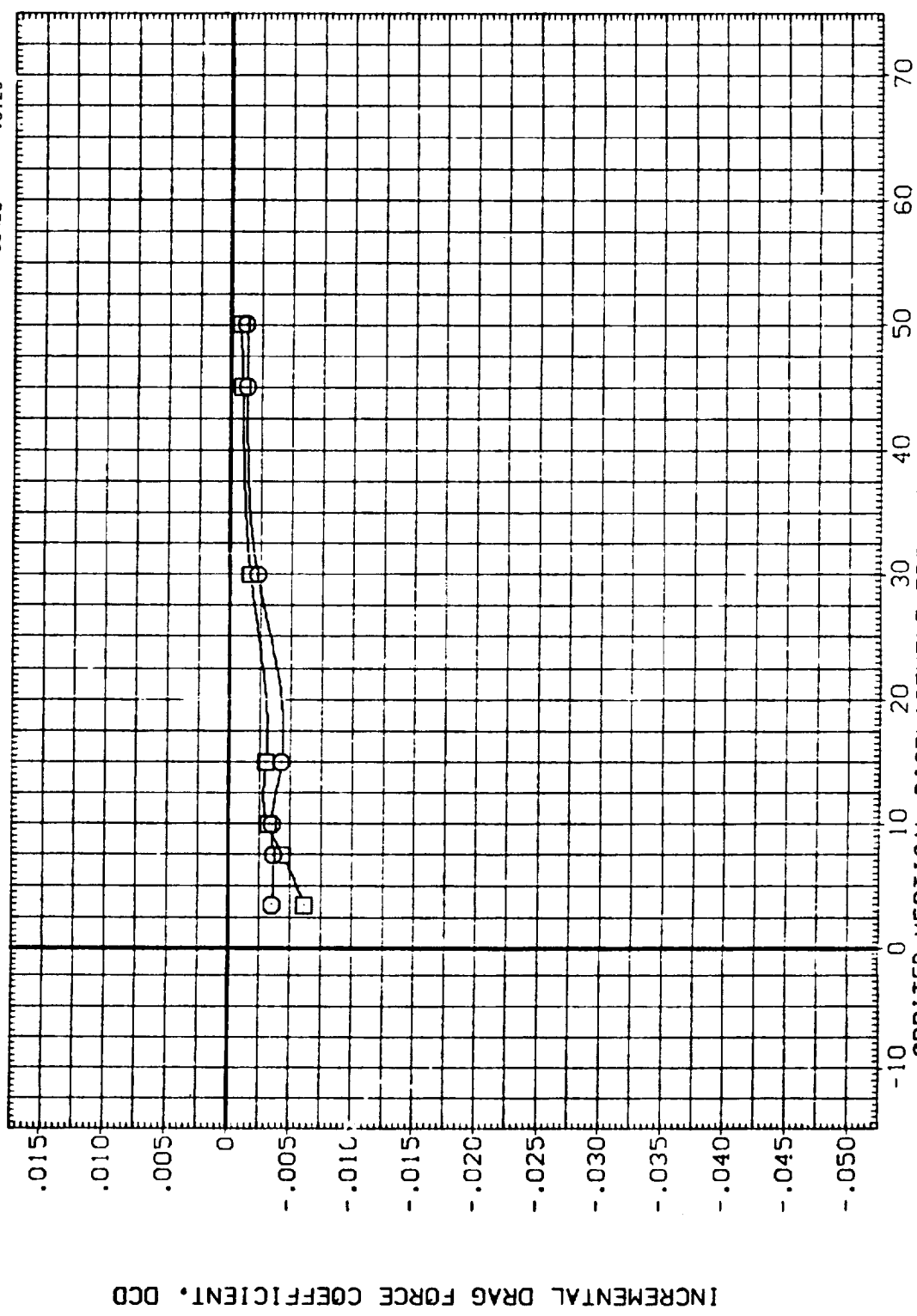


FIG. 53 EFFECT OF ORBITER TAILCONE ON ORBITER(IORB= 8.0 DEG.)

(AJALPHAC= .00

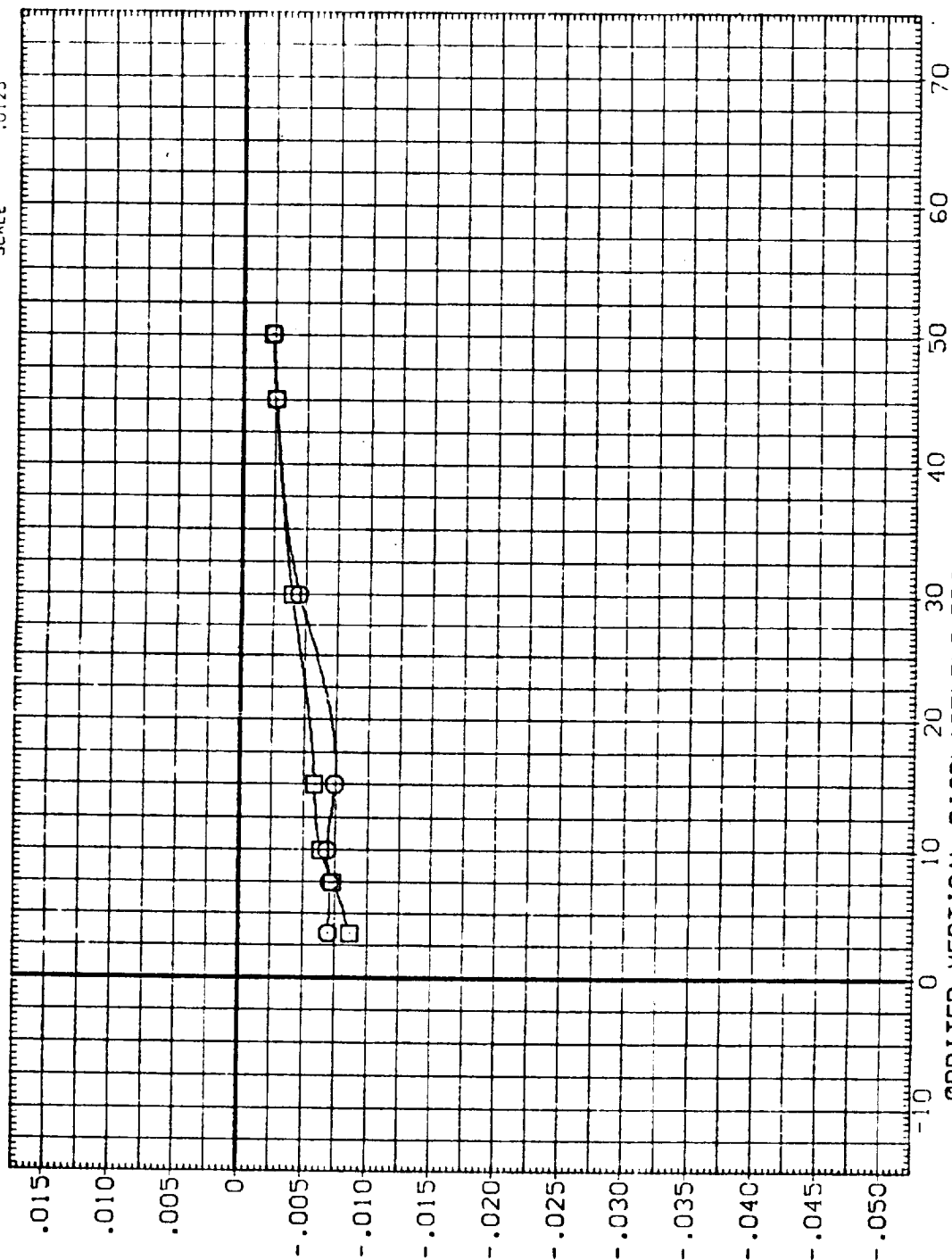
INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL (4NH027) (4NH022)

CONFIGURATION DESCRIPTION ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA) 747/1 AT1 0251 (ORBITER DATA)

IORB 8.000  
ELEVON .000  
MACH .600  
STAB 5.000

REFERENCE INFORMATION  
SREF 2690.0000 SC.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X3  
YMRP .0000 IN. Y3  
ZMRP 375.0000 IN. Z3  
SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 53 EFFECT OF ORBITER TAILCONE ON ORBITER (IORB= 8.0 DEG.)

(B)ALPHAC= 2.00

DATA SET SYMBOL  
(4NH027)  
(4NH022)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)

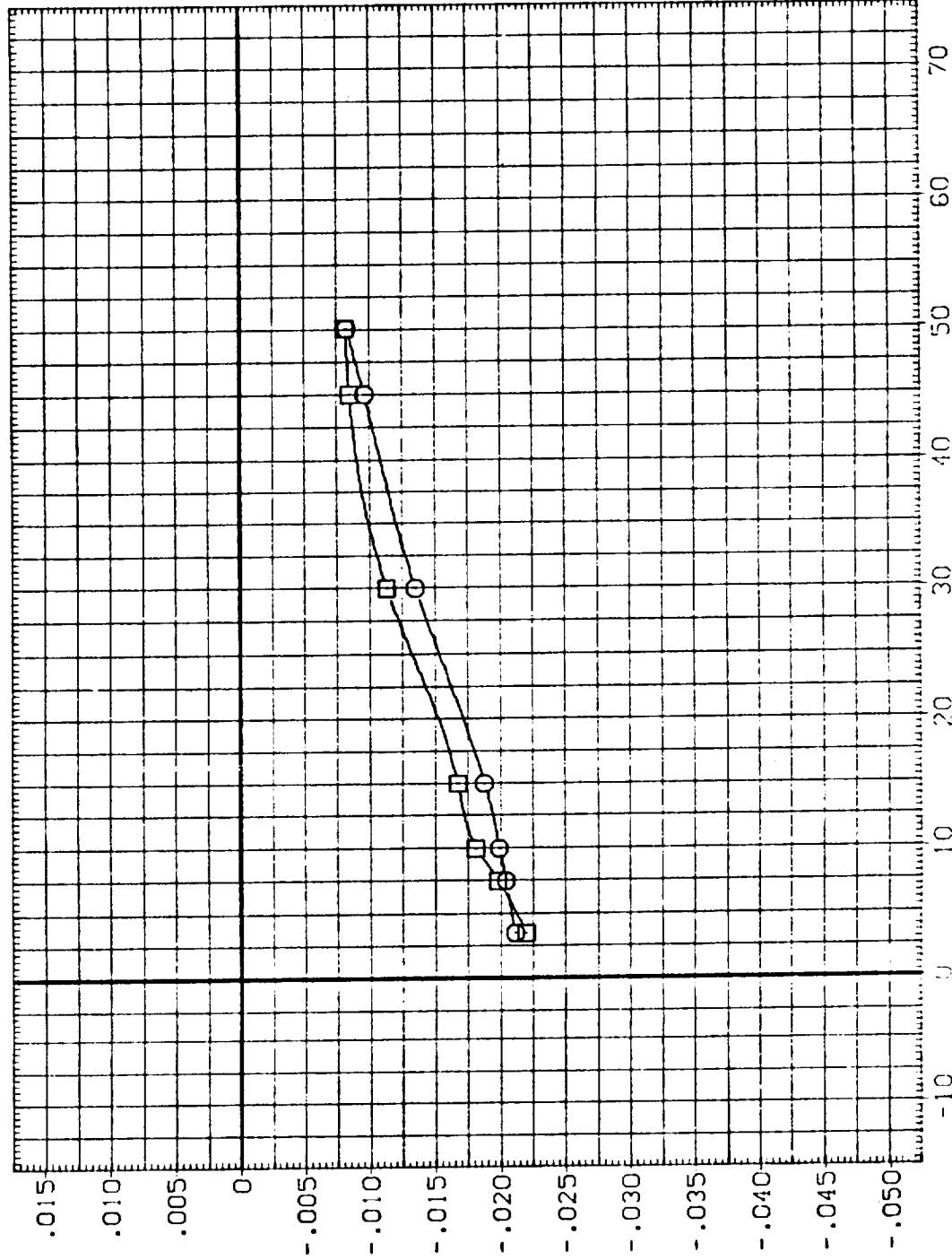
IORB  
8.000

ELEVON  
.000  
.000

MACH  
.600  
.600

STAB  
5.000  
5.000

REFERENCE INFORMATION  
SREF 2690.0000 50.FT.  
REF 474.8100 IN.  
BREF 936.6800 IN. X0  
XMRP 1109.0000 IN. Y0  
YMRP .0000 IN. Z0  
ZMRP 375.0000 IN. Z0  
SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 53 EFFECT OF ORBITER TAILCONE ON ORBITER (IORB= 8.0 DEG.)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH027) ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)  
 (4NH022) ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)

IORB 8.000  
 ELEVON .000  
 MACH .600  
 STAB 5.000  
 REFERENCE INFORMATION  
 SREF 2690.0000 50. FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

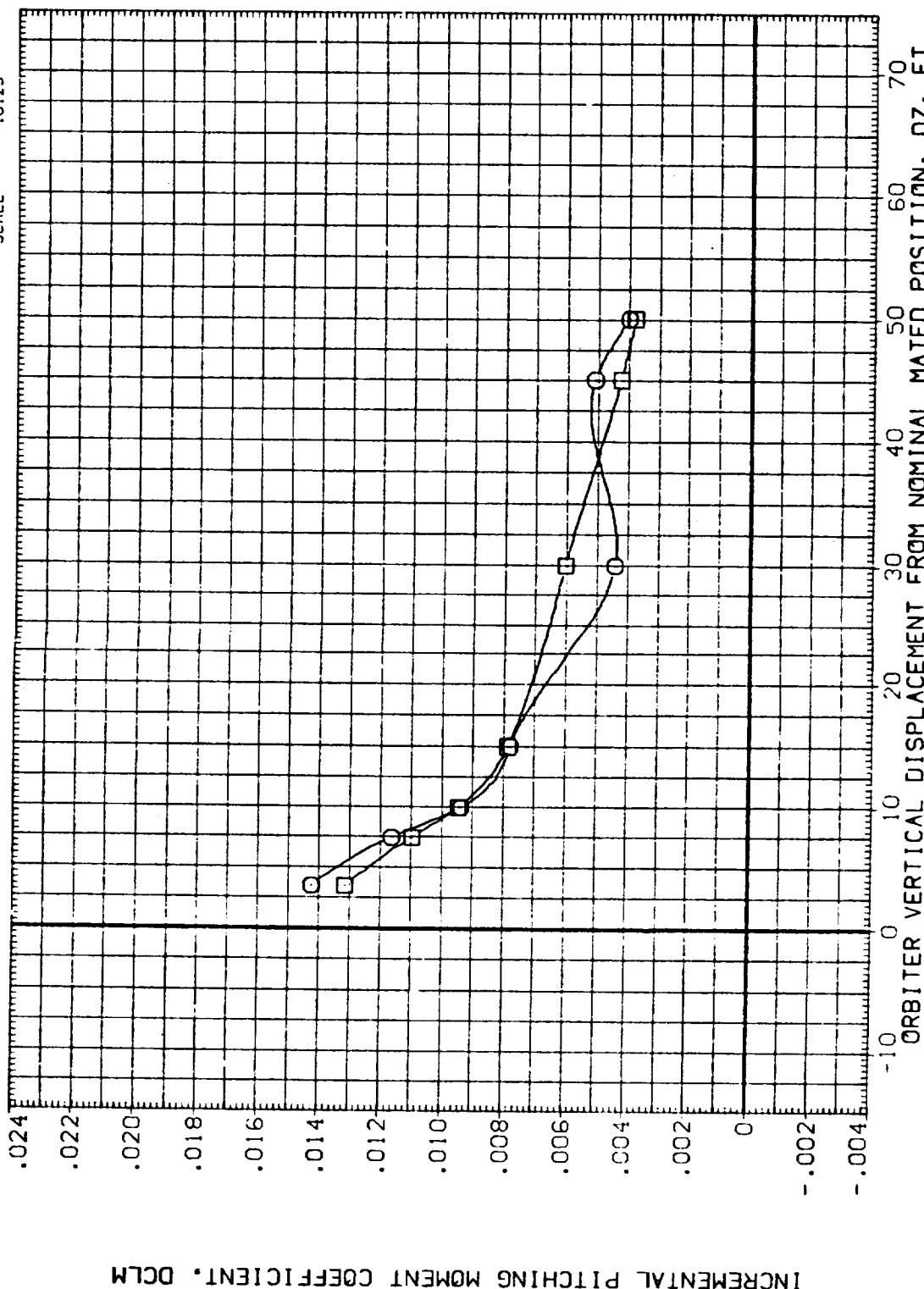


FIG. 53 EFFECT OF ORBITER TAILCONE ON ORBITER(10RB= 8.0 DEG.)

(A)ALPHAC= .00

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DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (4NH027)    □    ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)  
 (4NH022)    □    ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

IORB    ELEVON    MACH    STAB  
 8.000    .000    .600    5.000  
 8.000    .000    .600    5.000

REFERENCE INFORMATION  
 SREF    2690.0000    SQ.FT.  
 LREF    474.8100    IN.  
 BREF    936.6800    IN.  
 XMRP    1109.0000    IN. X0  
 YMRP    .0000    IN. Y0  
 ZMRP    375.0000    IN. Z0  
 SCALE    .0125

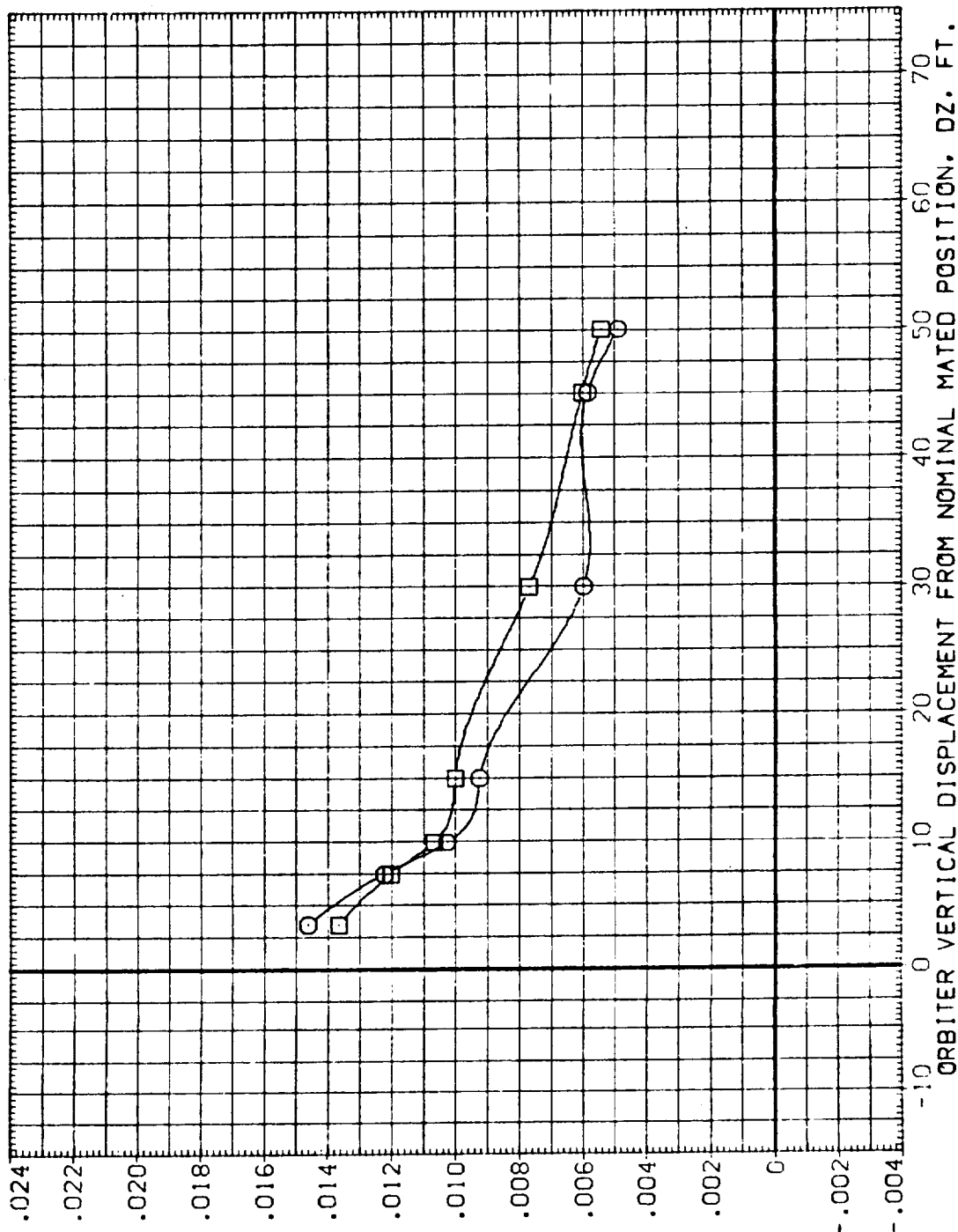


FIG. 53 EFFECT OF ORBITER TAILCONE ON ORBITER(IORB= 8.0 DEG.)

(B)ALPHAC= 2.0°

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH027) □ ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)  
 (4NH022) □ ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)

IORB ELEVON MACH STAB  
 8.000 .000 .600 5.000  
 8.000 .000 .600 5.000  
 REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

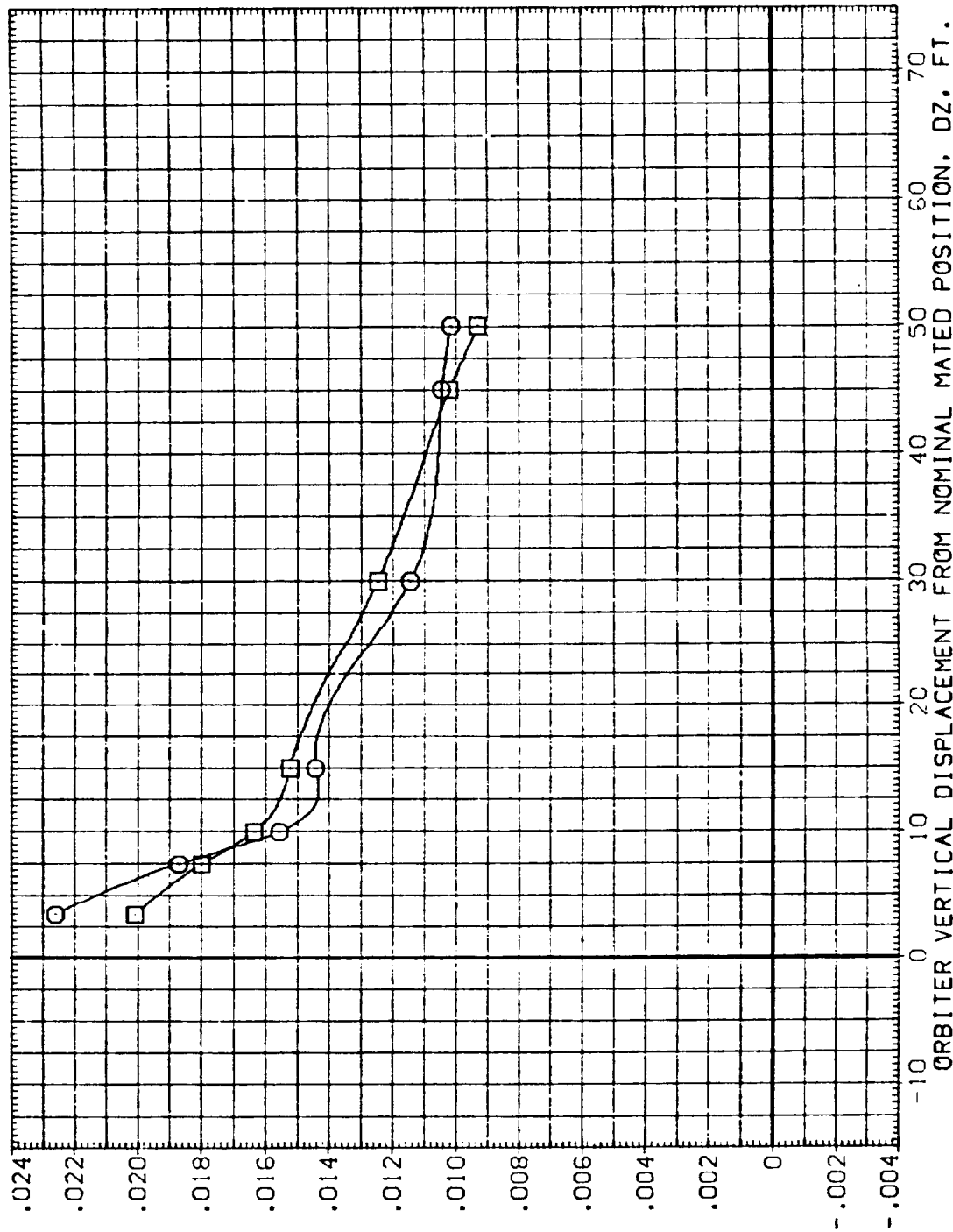


FIG. 53 EFFECT OF ORBITER TAILCONE ON ORBITER (IORB= 8.0 DEG.)

(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH038)	ARC 14-120(CA238) 747/1 AT1 Q351 (CARRIER DATA)	6.000	5.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

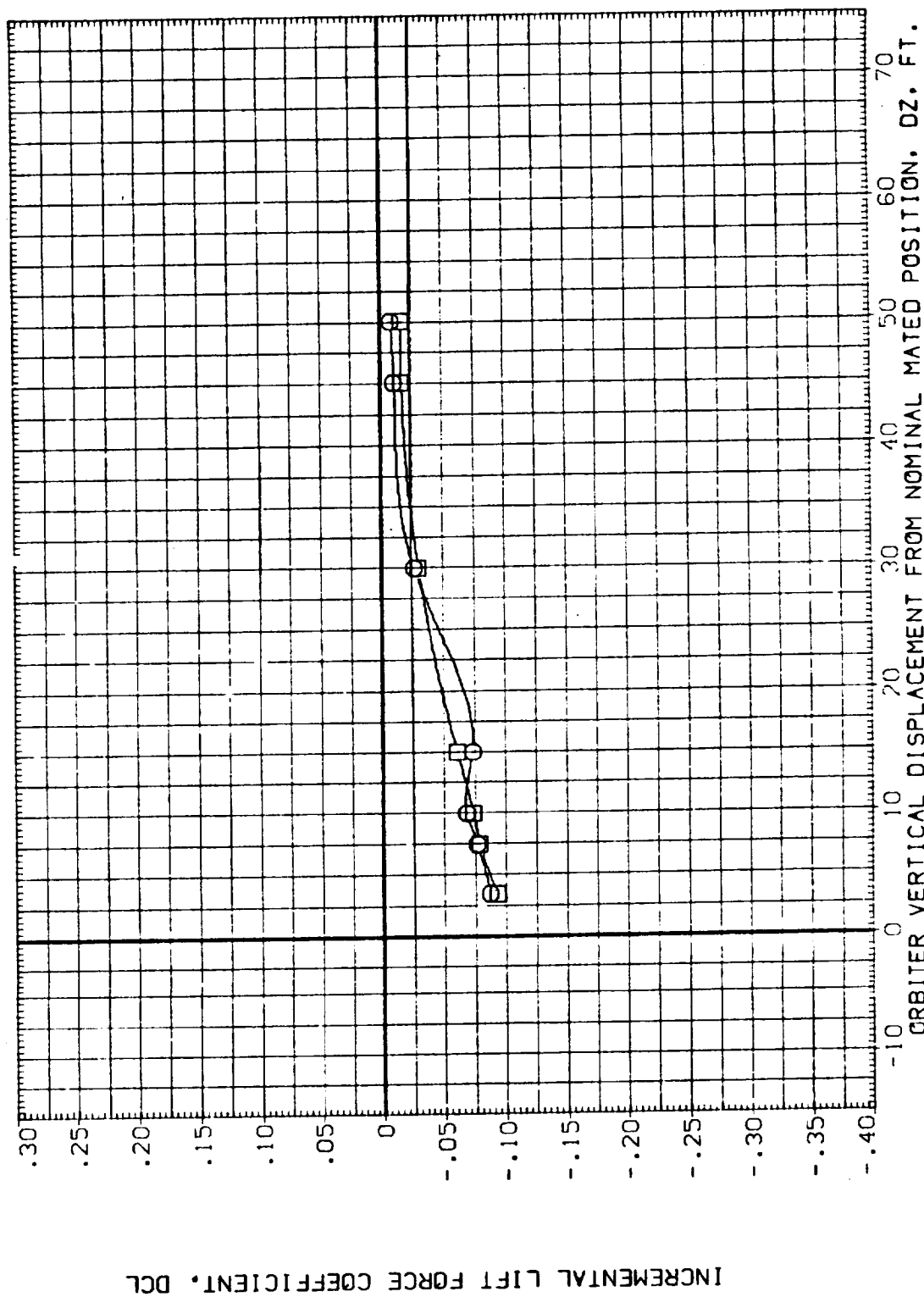


FIG. 54 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)  
 (A) ALPHAC = .00

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL

CONFIGURATION DESCRIPTION

ORBITER (CARRIER DATA)

ELEVON

MACH

STAB

REFERENCE INFORMATION

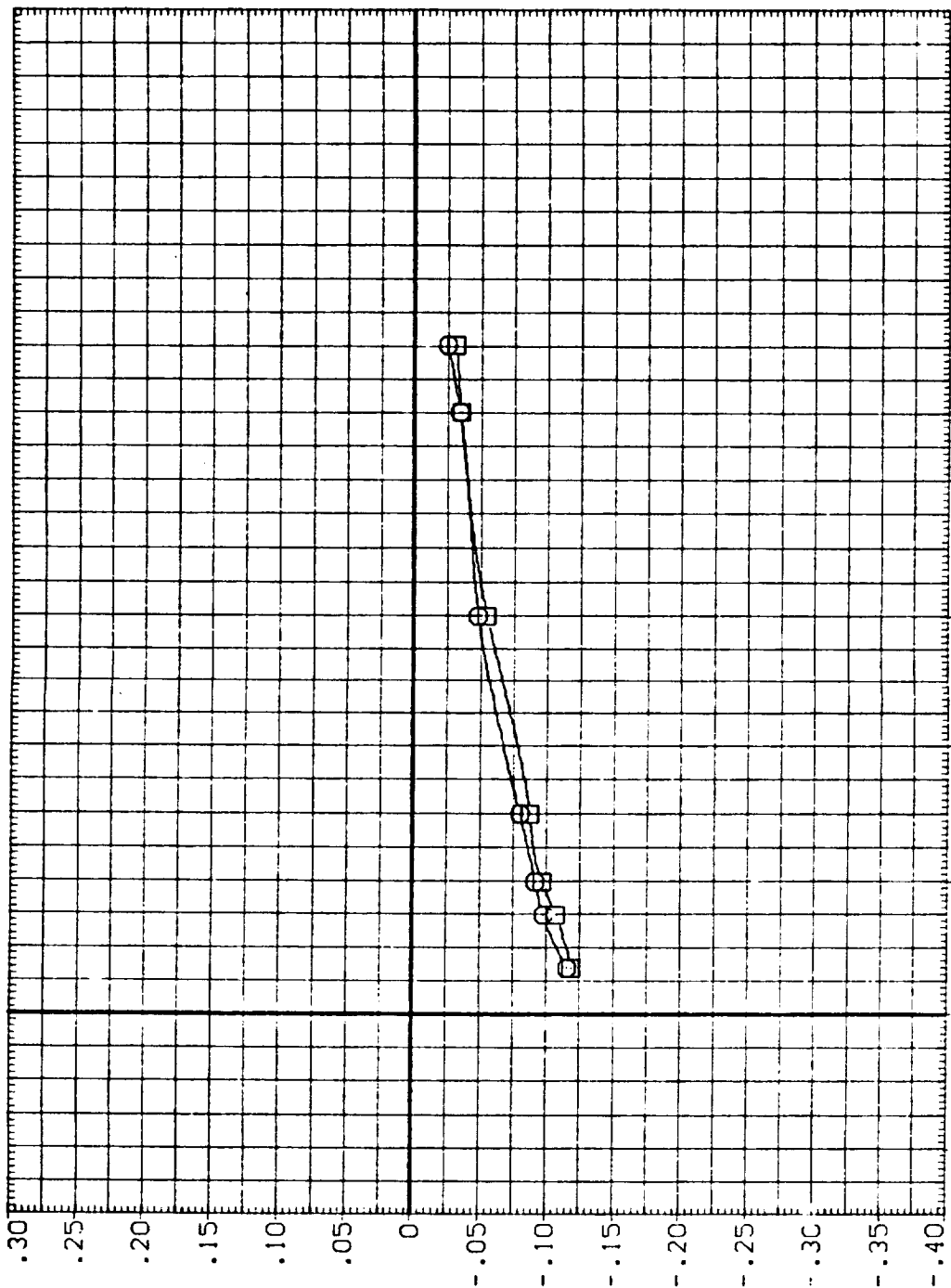


FIG. 54 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG.,IORB=6.0 DEG.,ELEVON= 5)  
(B)ALPHAC= 2.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH038)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	5.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

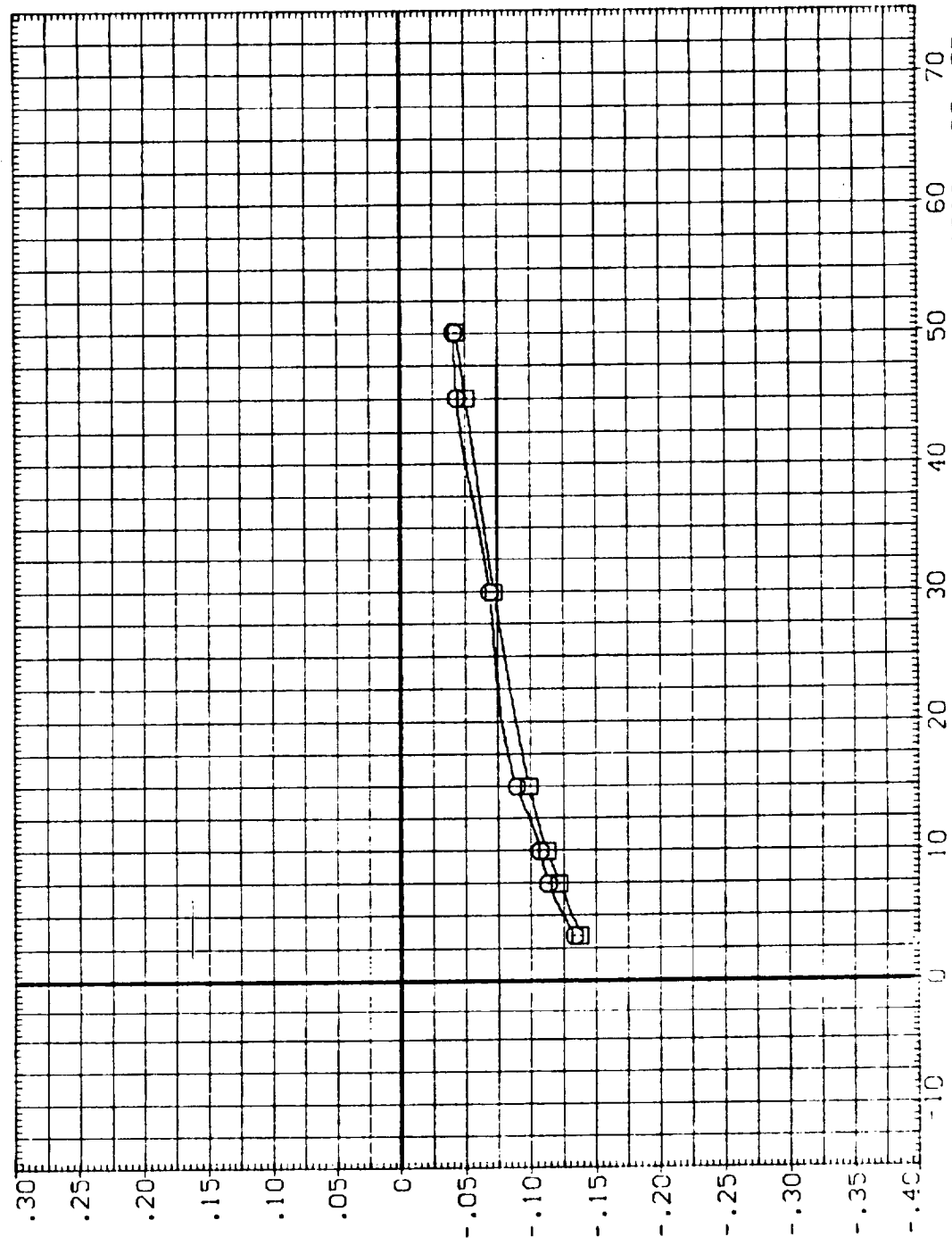


FIG. 54 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON=5)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH038)	ARC 14-120(CA238)	6.000	5.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH013)	ARC 14-120(CA238)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XG
						YMRP .0000 IN. YG
						ZMRP 190.7500 IN. ZC
						SCALE .0125

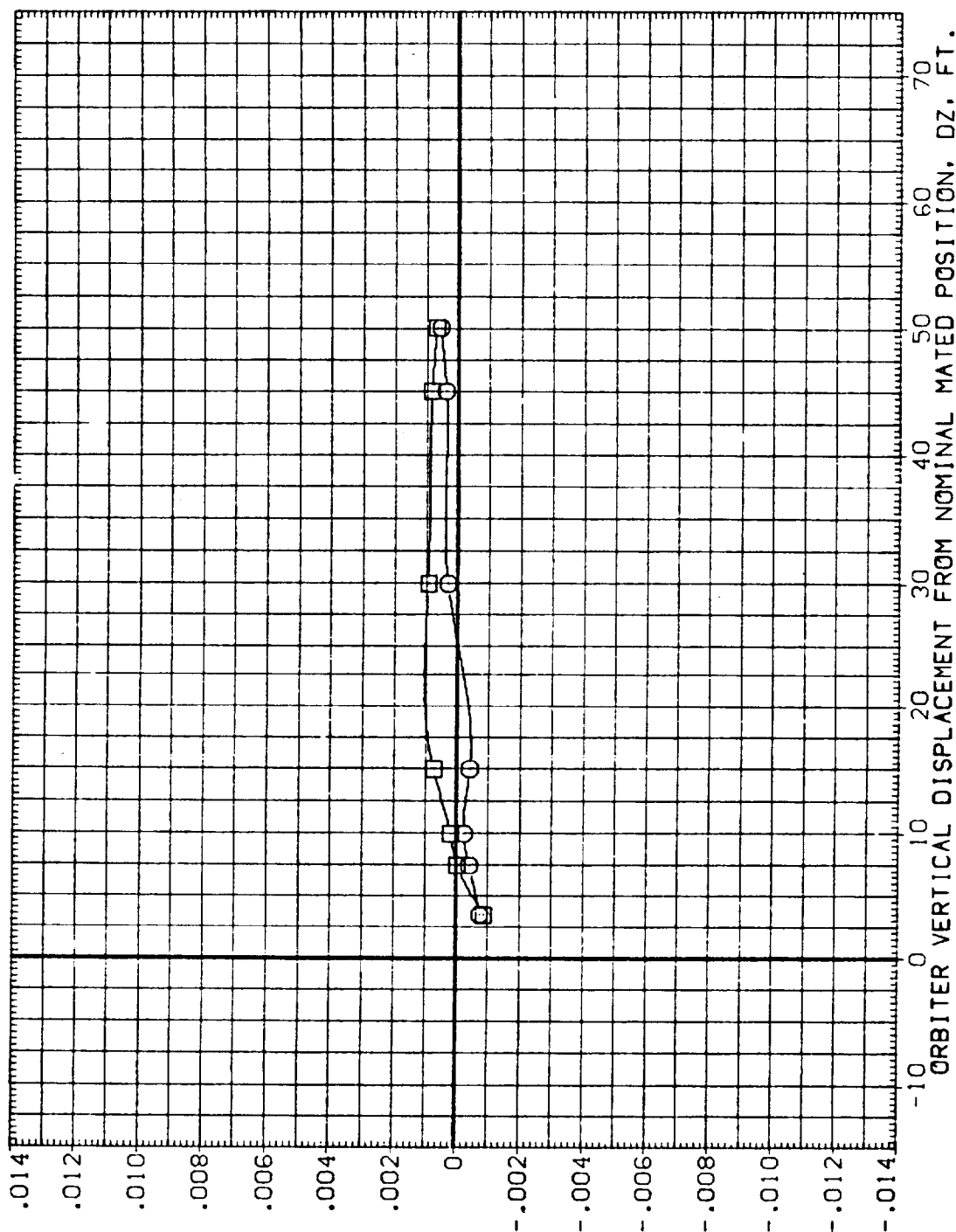


FIG. 54 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)  
 (A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH038)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	5.000	.800	5.000	SREF 5500.0000 SQ.FT.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.800	5.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

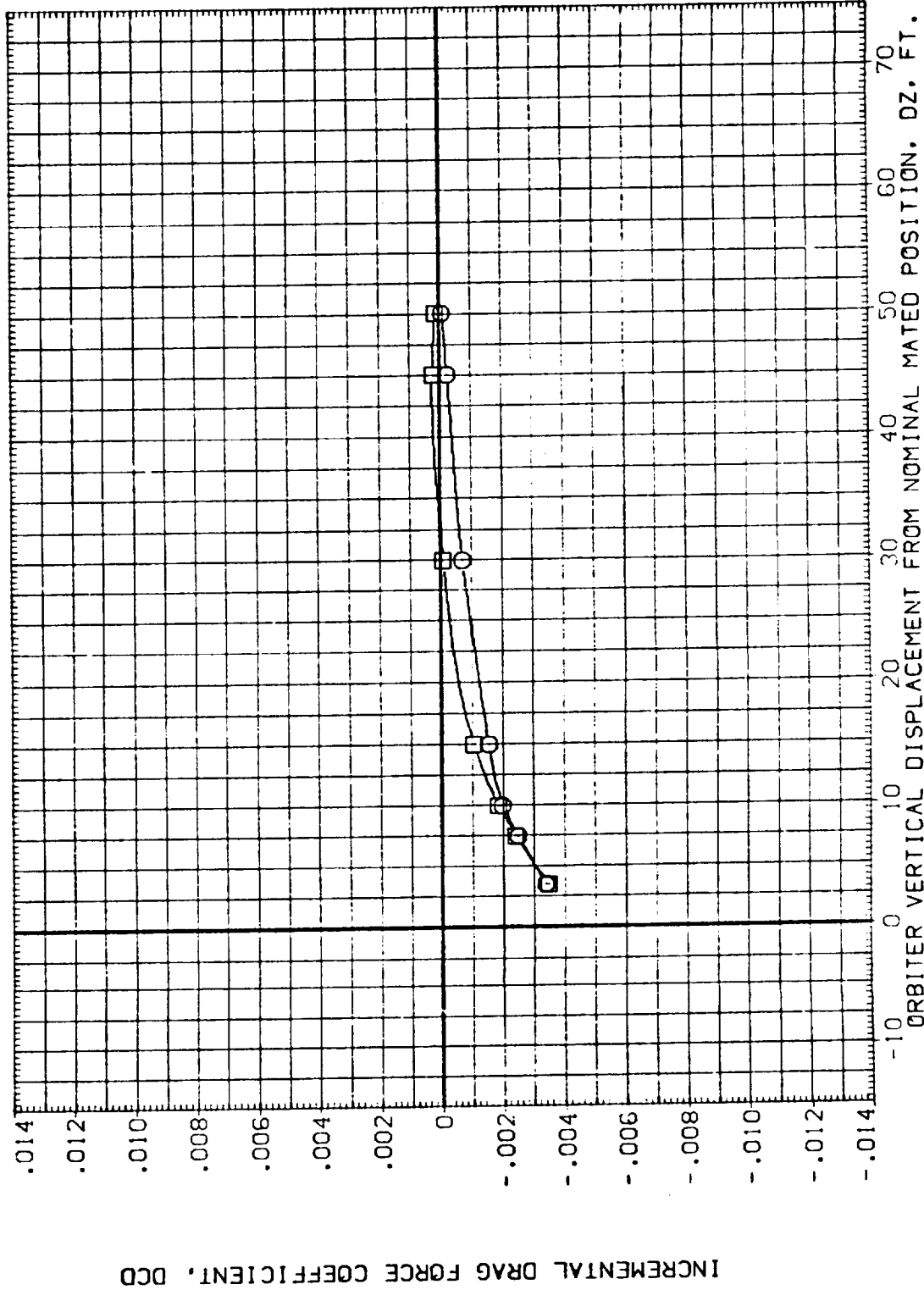


FIG. 54 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)  
(B)ALPHAC= 2.00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
(PINH038)    ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
(PINH013)    ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

IORB    ELEVON    MACH    STAB    REFERENCE INFORMATION  
6.000    5.000    .600    5.000    SREF    5500.0000    50.FT.  
6.000    5.000    .600    5.000    LREF    327.7800    IN.  
XMRP    1339.9000    IN.    XC  
YMRP    .0000    IN.    YC  
ZMRP    190.7500    IN    ZC  
SCALE    .0125

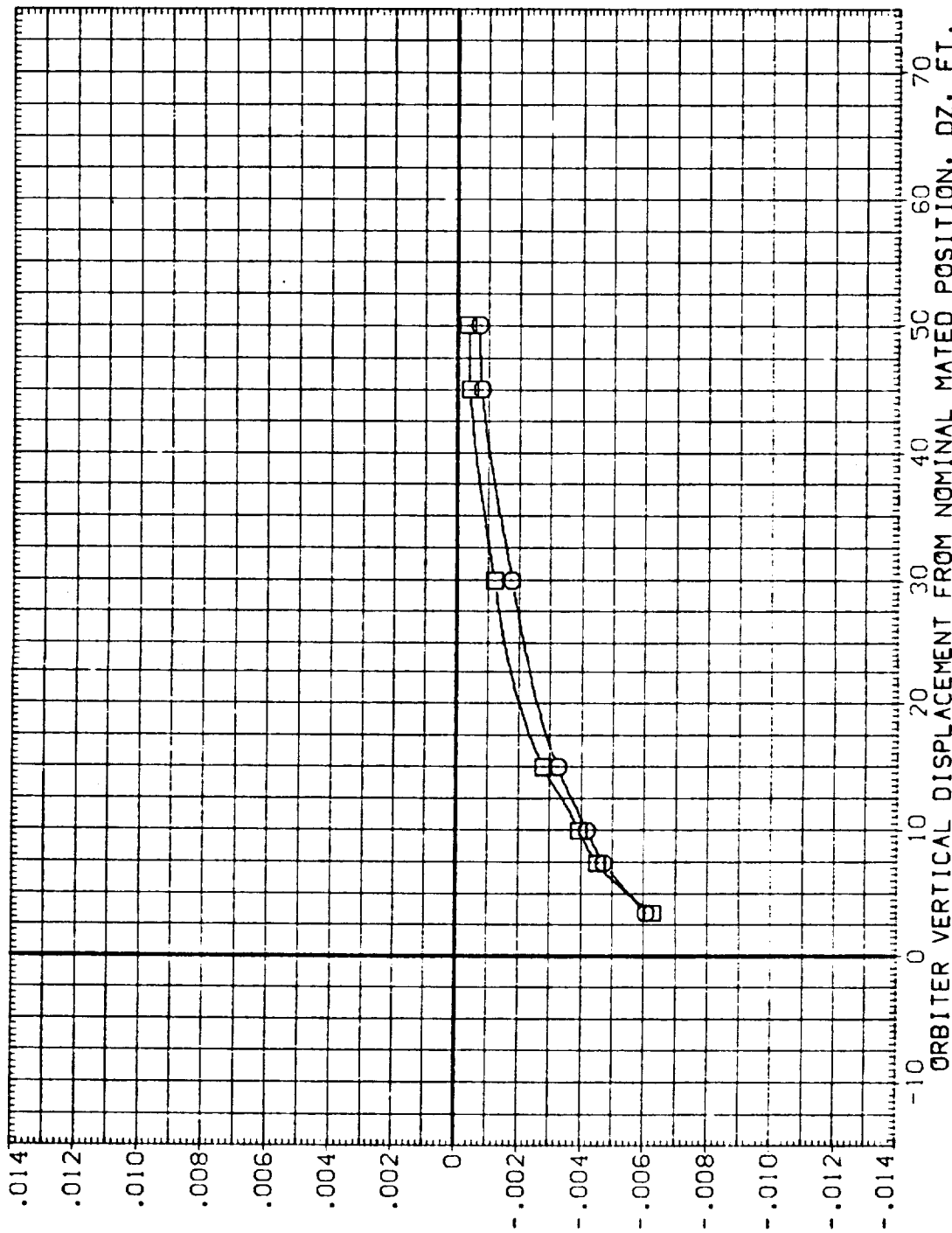


FIG. 54 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)

(C)ALPHAC= 4.00

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REFERENCE INFORMATION	
SREF	\$500,000 SO.FT.
LREF	327,780 IN.
BREF	2348,040 IN.
XMRP	1339,900 IN. XC
YMRP	.000 IN. YC
ZMRP	190,750 IN ZC
SCALE	.0125

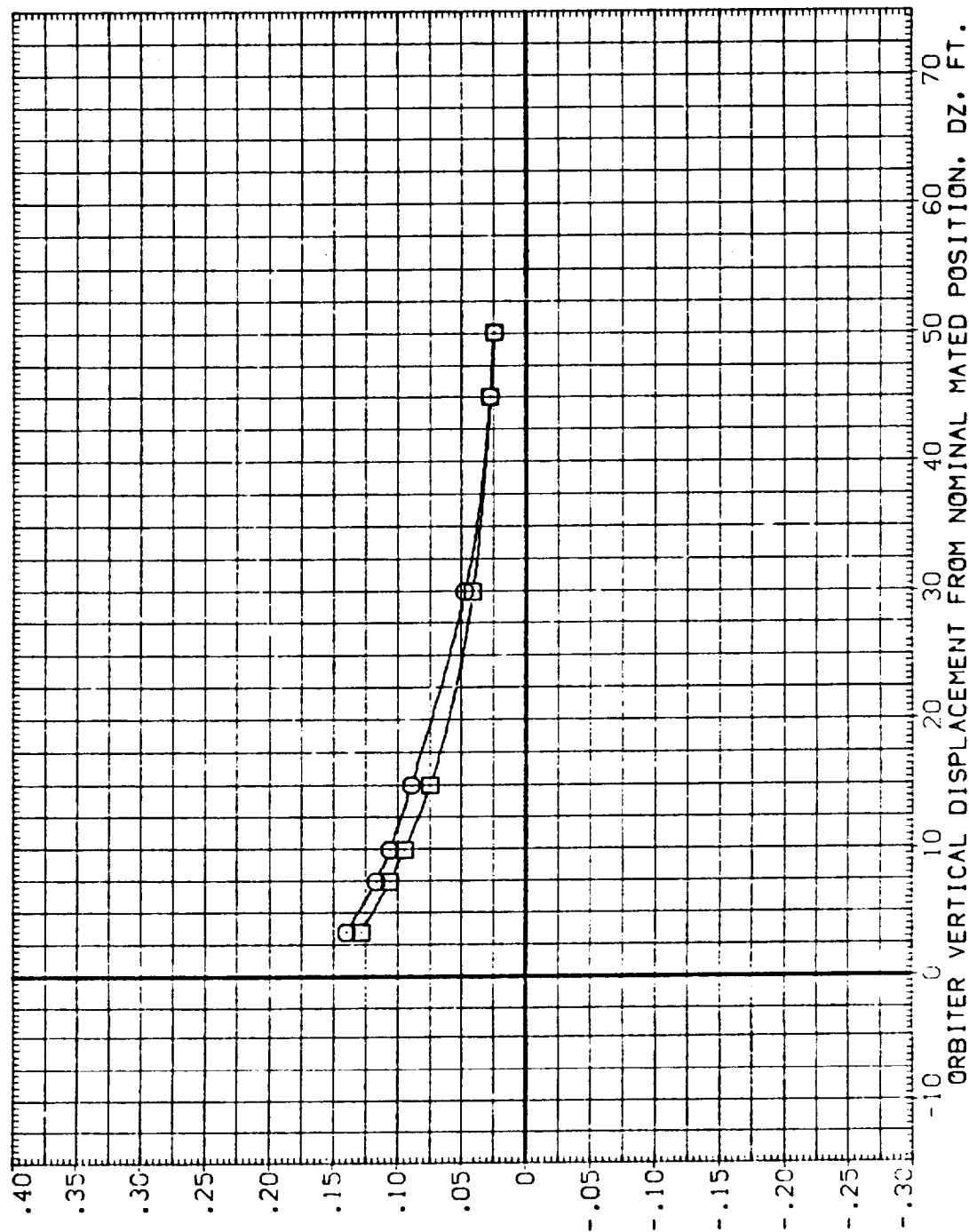


FIG. 54 EFFECT OF ORB TAILCONE ON CARRIER (STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)

DATA SET SYMBOL  
(PNH038)  
(PNH013)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

IORB ELEVON MACH STAB  
6.000 5.000 .600 5.000  
6.000 5.000 .600 5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

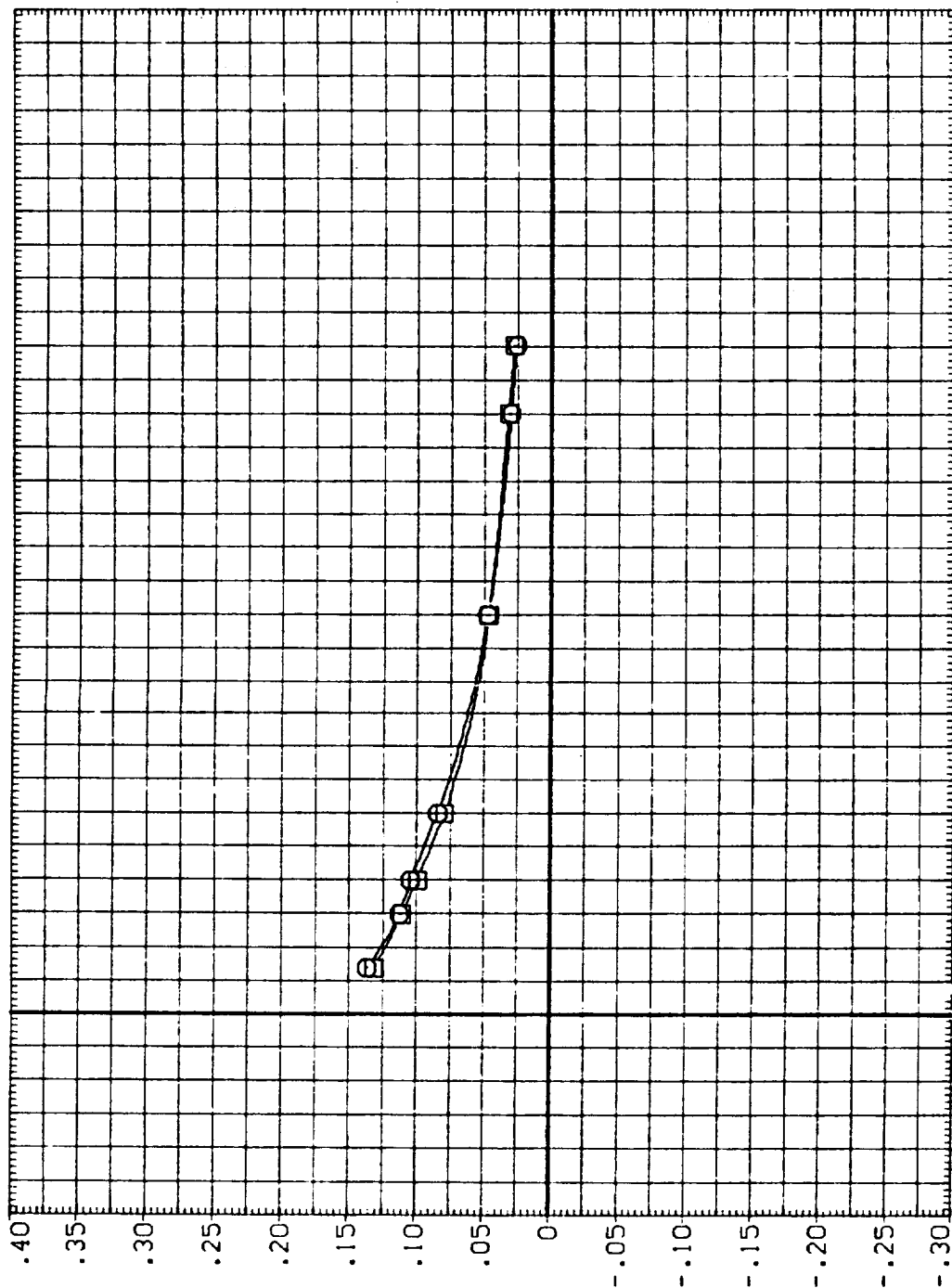


FIG. 54 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)  
(B)ALPHAC= 2.00

DATA SET SYMBOL  
(PNH038)  
(PNH013)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 32S1 (CARRIER DATA)

IORB  
6.000  
6.000

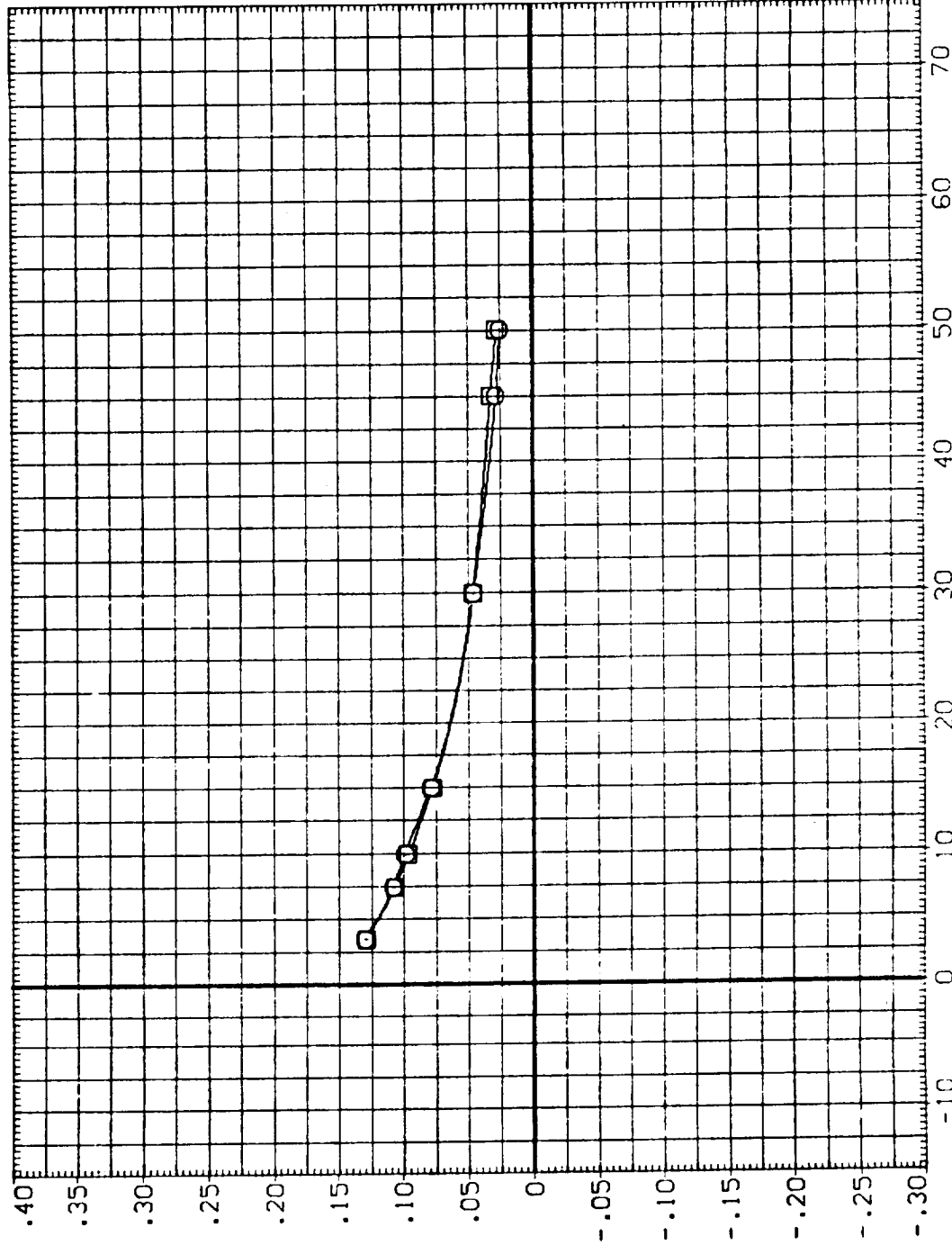
ELEVON  
5.000  
5.000

MACH  
.600  
.600

STAB  
5.000  
5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 54 EFFECT OF ORB TAILCONE ON CARRIER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH038)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	5.000	.600	5.000	SREF 2690.0000 50.FT.
(4NH013)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

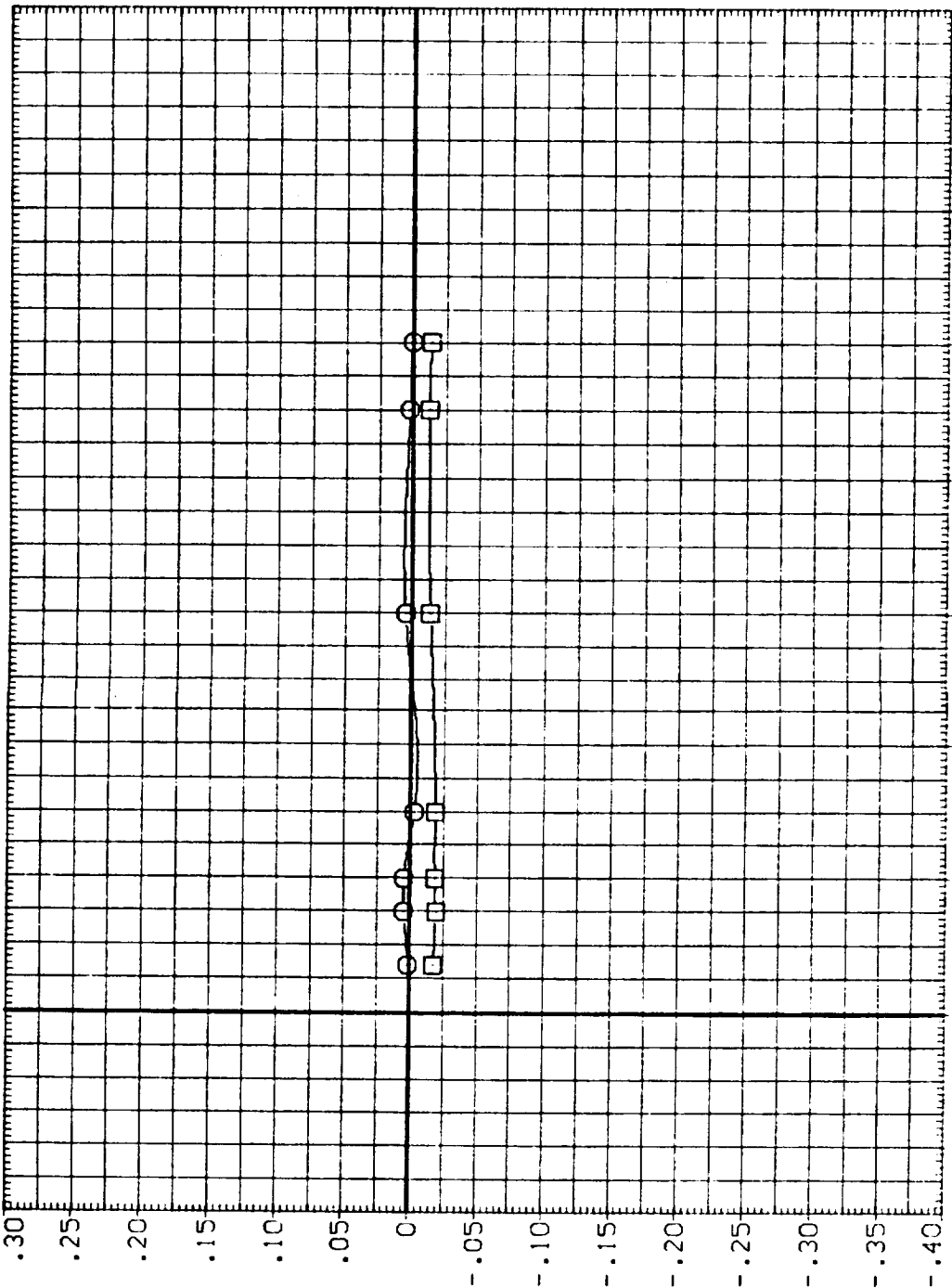


FIG. 55 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)  
 (A)ALPHAC= .00



ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
6.000	5.000	.600	5.000	SREF 2690.0000 SQ.FT.
6.000	5.000	.600	5.000	LREF 474.8100 IN.
				BREF 936.6800 IN.
				XHRP 1109.0000 IN. X0
				YHRP .0000 IN. Y0
				ZHRP 375.0000 IN. Z0
				SCALE .0125

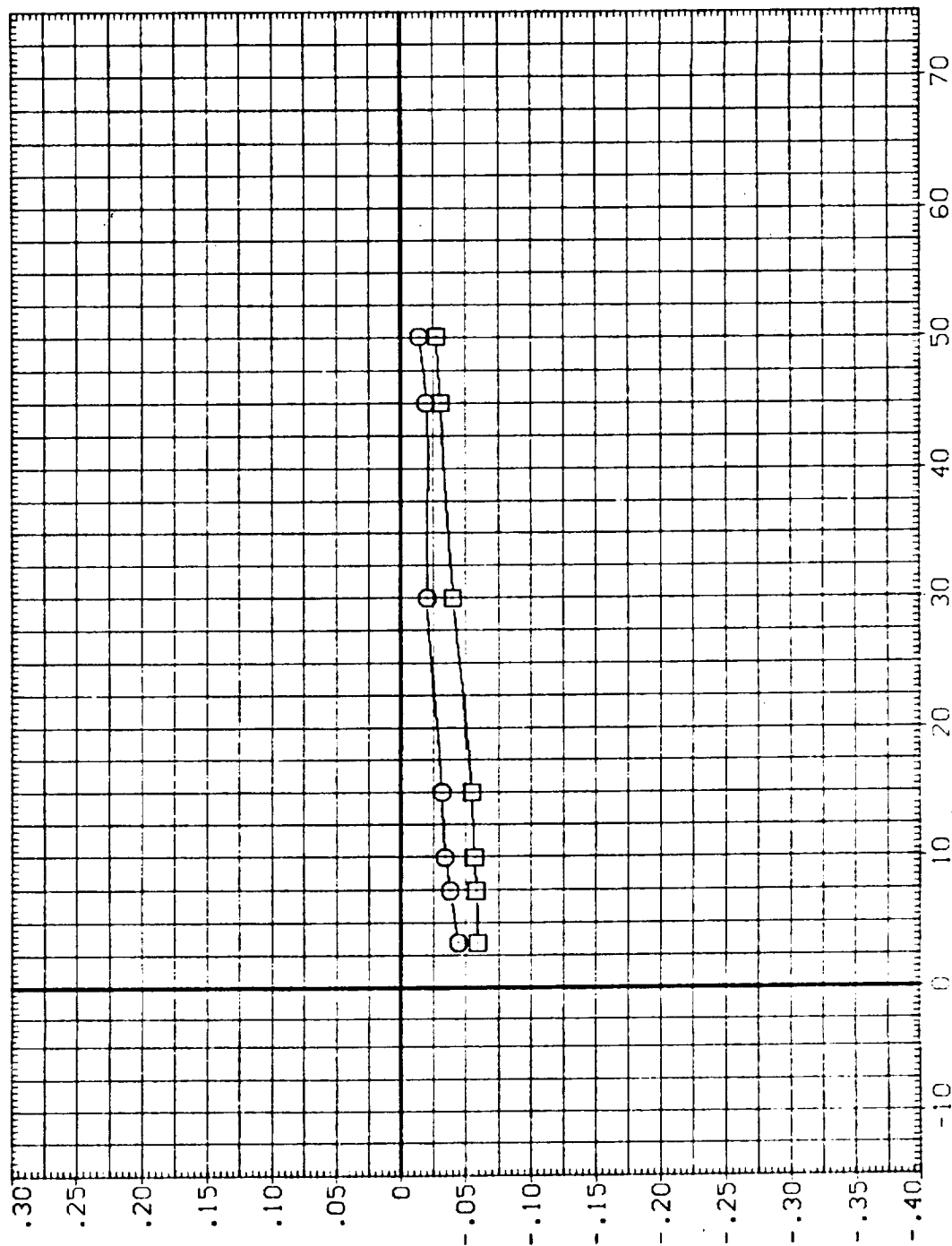


FIG. 55 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONF(IGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH038)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	5.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH013)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

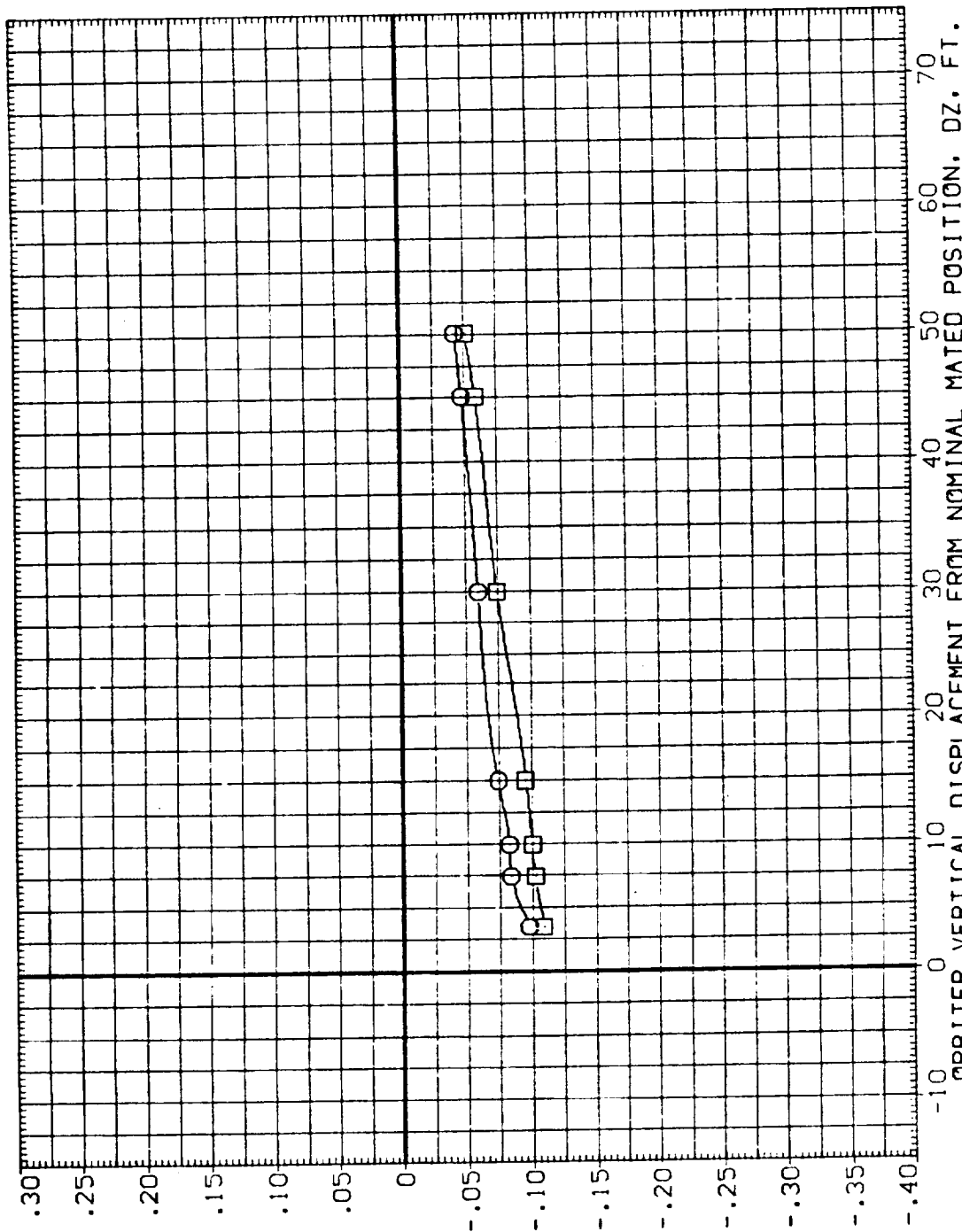


FIG. 55 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)

(C)ALPHAC= 4.00

( 4NH038 )  
( 4NH013 )

ARC 14-120(CA23B)	747/1	AT
ARC 14-120(CA23B)	747/1	AT

03SI (ORBITER DATA)  
02SI (ORBITER DATA)03SI (ORBITER DATA)  
02SI (ORBITER DATA)

ICRB  
6.000  
6.000

ICRB  
6.000  
6.000

ELEVEN  
5.000  
5.000

5.000  
5.000  
ELEVATION

MACH .600  
MACH .600

MACH .600  
009.600

STAB  
5.000  
5.000

STAB  
5.000  
5.000

REFE  
SREF  
LREF

REFE  
SREF  
LREF

INCE INP  
2690.00  
474.81

INCE INI  
2690.00  
474.81

INFORMATION

INFORMATION

ION  
SQ.FT.  
IN.

ION  
SQ. FT.  
IN.

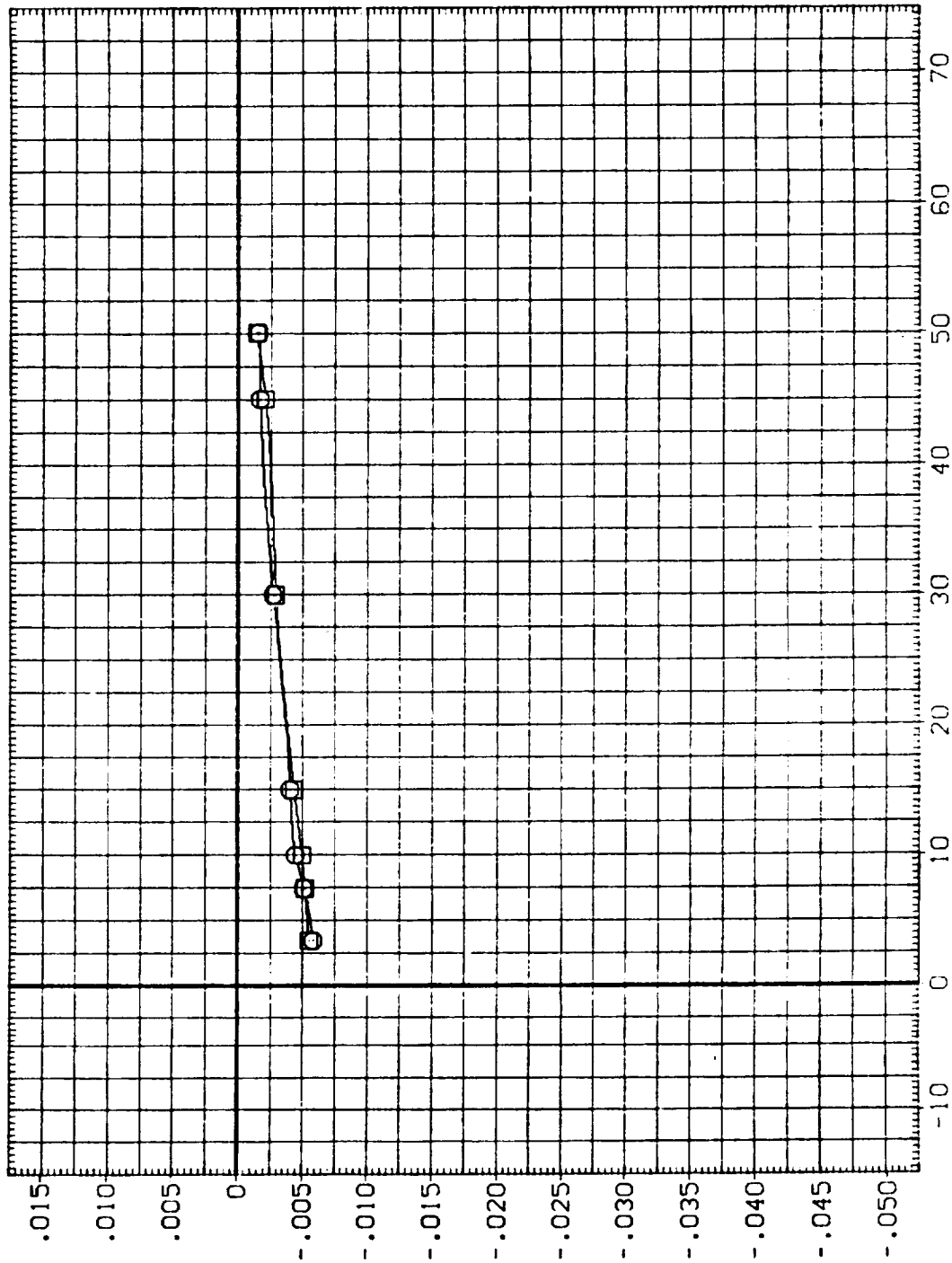


FIG. 55 EFFECT OF ORB TAILCONE ON ORBITER (STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)

[A]ALPHAC= .00

DATA SET SYMBOL  
(4N+038)  
(4N+013)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT: 0351 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT: 3251 (ORBITER DATA)

ORBITER  
6.000  
6.000

ELEVON  
5.000  
5.000

MACH  
.600  
.600

STAB  
5.000  
5.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

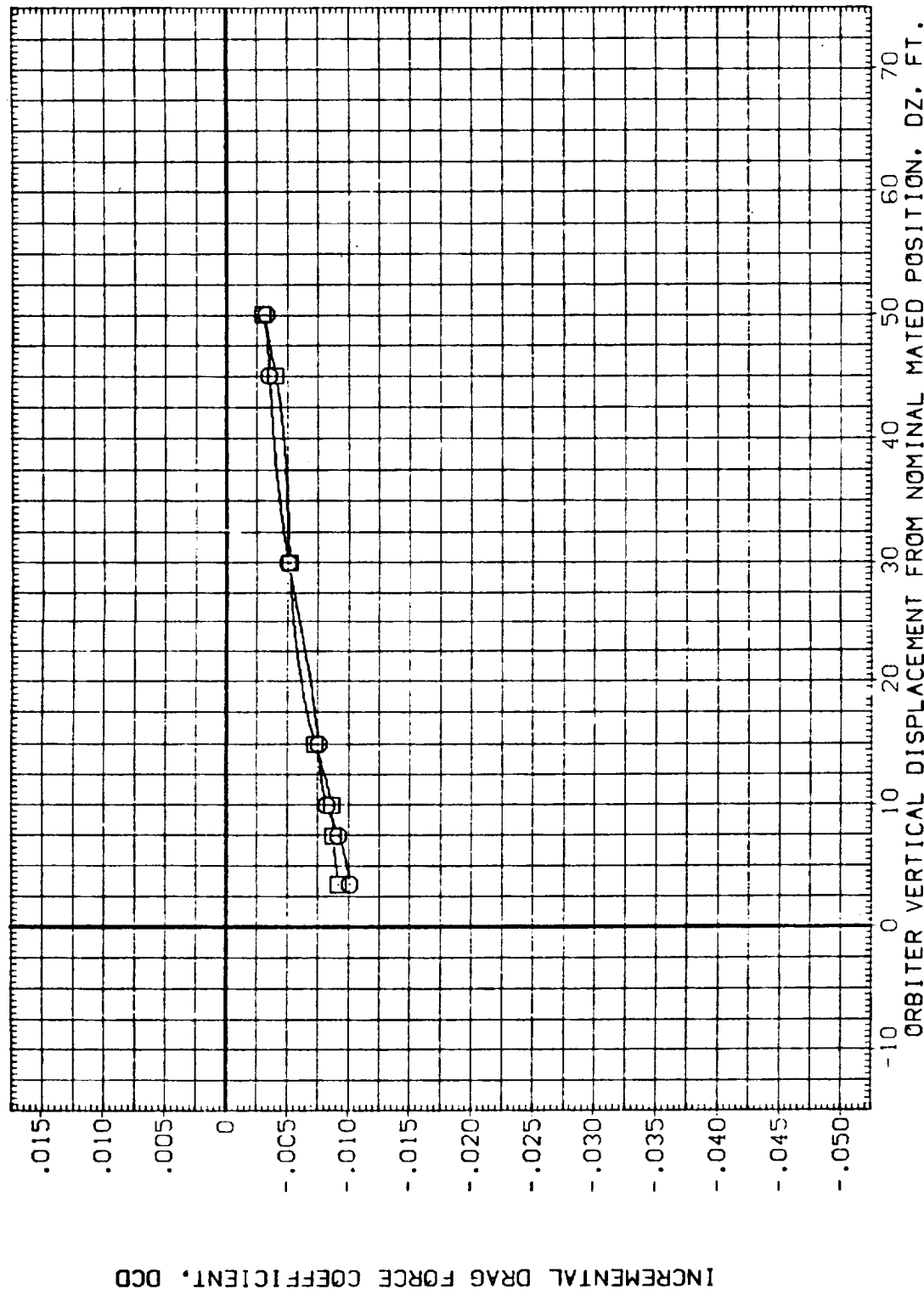


FIG. 55 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)  
(B)ALPHAC= 2.00 PAGE 458

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DATA SET SYMBOL  
(4NH038)  
(4NH013)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 03S1 (ORB1TER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORB1TER DATA)

IORB ELEVON MACH STAB  
6.000 5.000 .600 5.000  
6.000 5.000 .600 5.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

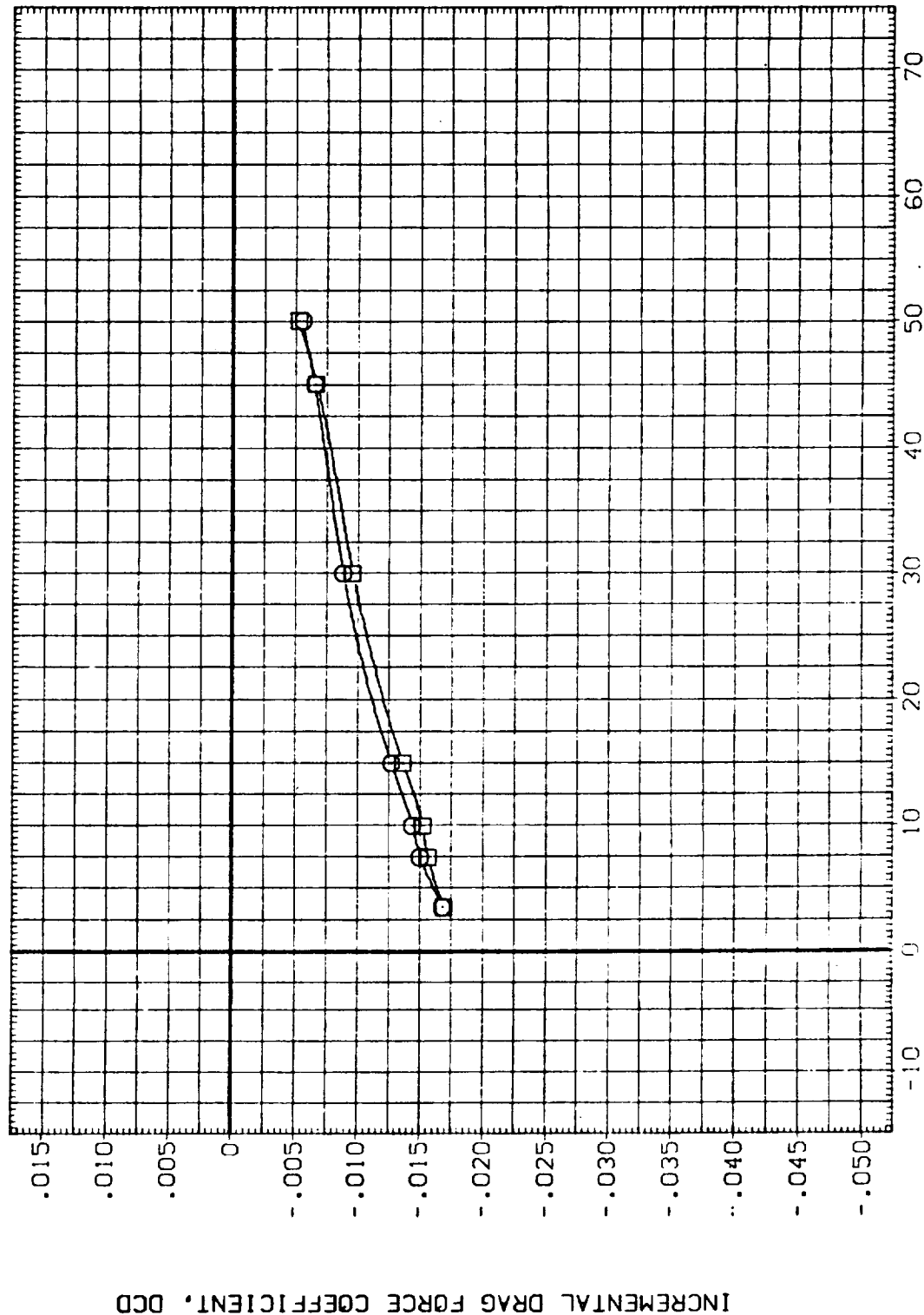


FIG. 55 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL  
(4NH038)  
(4NH013)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)

IORB 6.000 6.000

ELEVON 5.000 5.000

MACH .600 .600

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

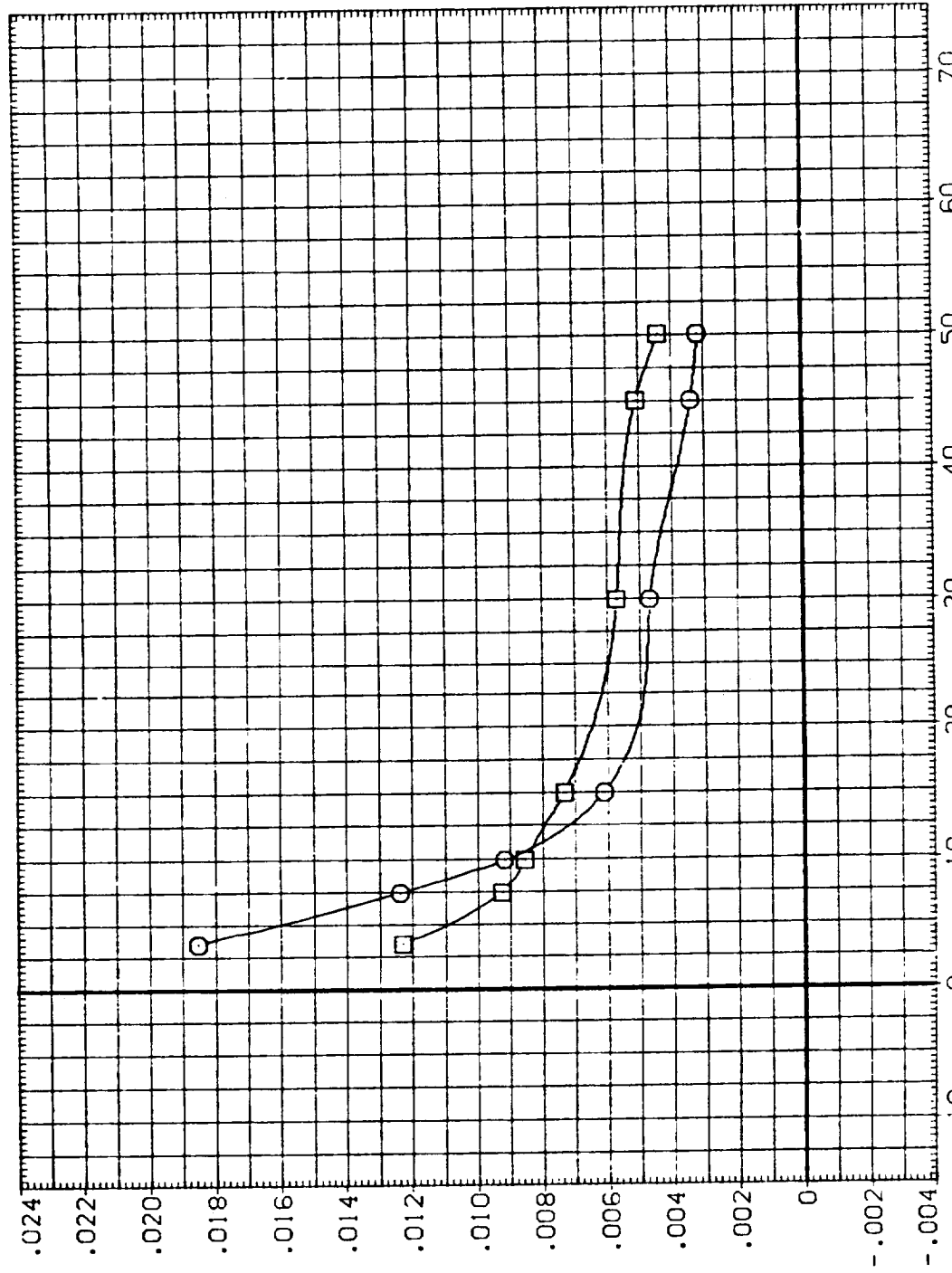
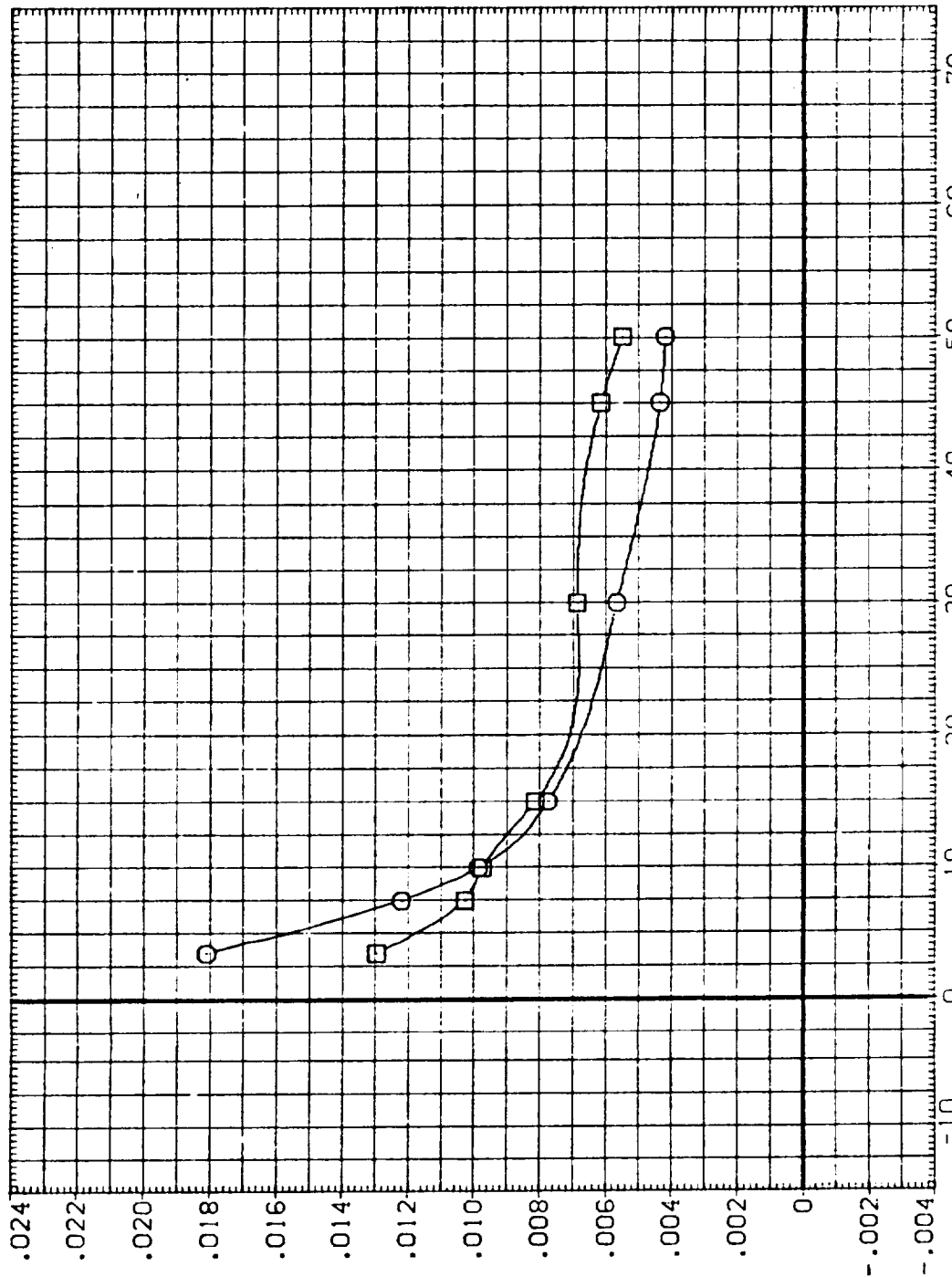


FIG. 55 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG.,IORB=6.0 DEG.,ELEVON= 5)  
(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH038)	ARC 14-120(CA238)	747/1 AT1 Q3S1 (ORB)ITER DATA)	6.000	5.000	5.000	SREF 2690.0000 SQ.FT.
(4NH013)	ARC 14-120(CA238)	747/1 AT1 Q2S1 (ORB)ITER DATA)	6.000	5.000	5.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, OZ, FT.

FIG. 55 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG.,IORB=6.0 DEG.,ELEVON= 5)

(B)ALPHAC= 2.00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORB    ELEVON    MACH    STAB    REFERENCE INFORMATION

(4NH038)	ARC 14-120(CA238)	747/1	AT1	03S1 (ORB1TER DATA)	6.000	5.000	SREF 2690.0000	50. FT.
(4NH013)	ARC 14-120(CA238)	747/1	AT1	02S1 (ORB1TER DATA)	6.000	5.000	LREF 474.8100	IN.
							BREF 936.6800	IN.
							XMRP 1109.0000	IN. X0
							YMRP 0.0000	IN. Y0
							ZMRP 3/5.0000	IN. Z0
							SCALE .0125	

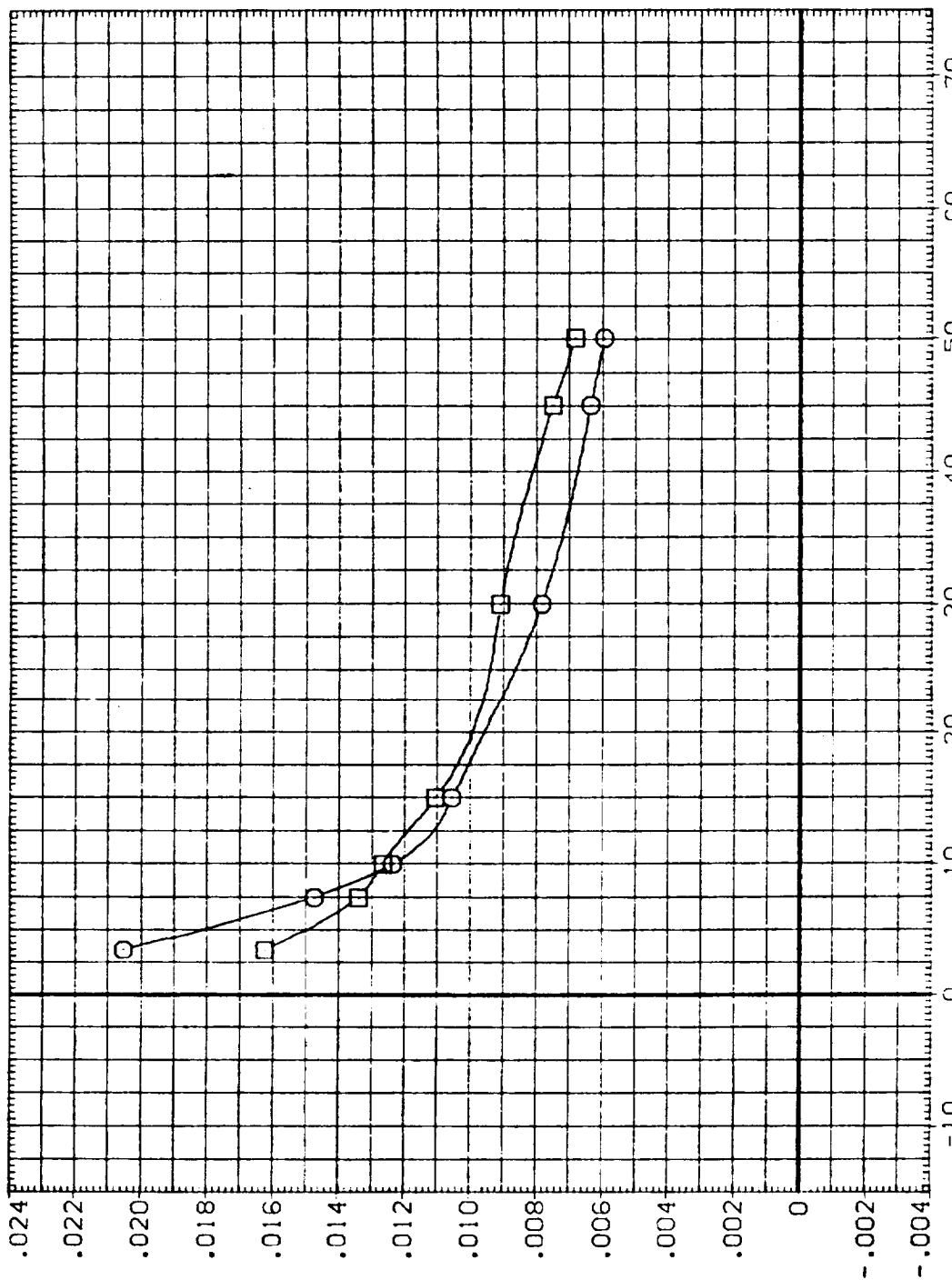


FIG. 55 EFFECT OF ORB TAILCONE ON ORBITER(STAB=5.0 DEG., IORB=6.0 DEG., ELEVON= 5)  
(C)ALPHAC= 4.00      PAGE 462

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNH037) ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)  
 (PNH024) ARC 14-120(CA23B) 747/1 AT1 Q251 (CARRIER DATA)

IORB 6.000  
 ELEVON .000  
 MACH .600  
 STAB -1.000  
 REFERENCE INFORMATION  
 SREF 5500.000C 50. FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1.339 .0000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

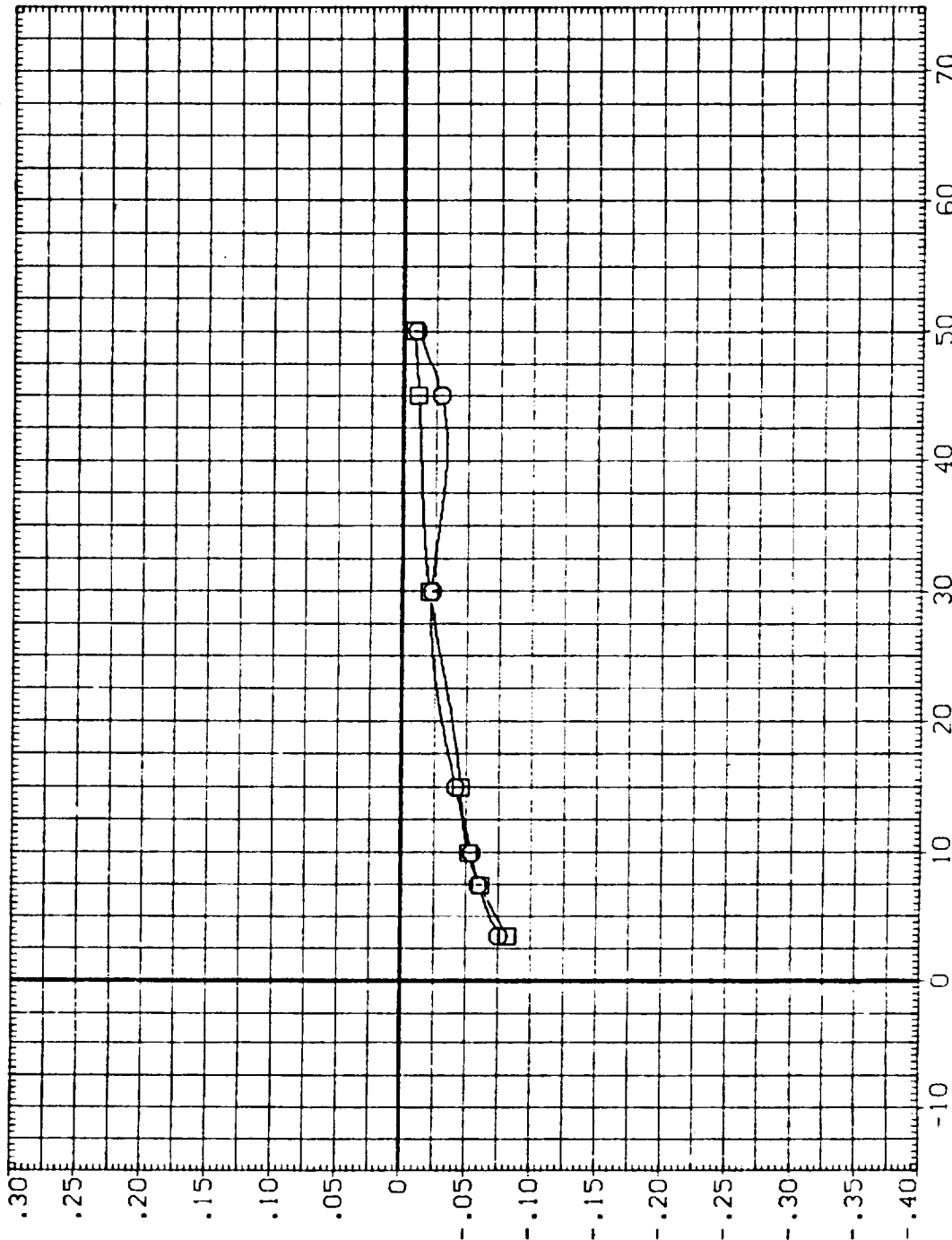


FIG. 56 EFFECT OF ORB TAILCONE ON CARRIER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)

CALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH037)	ARC 14-120(CA238) 747/1 AT 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 SO.FT.
(PNH024)	ARC 14-120(CA238) 747/1 AT 0251 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

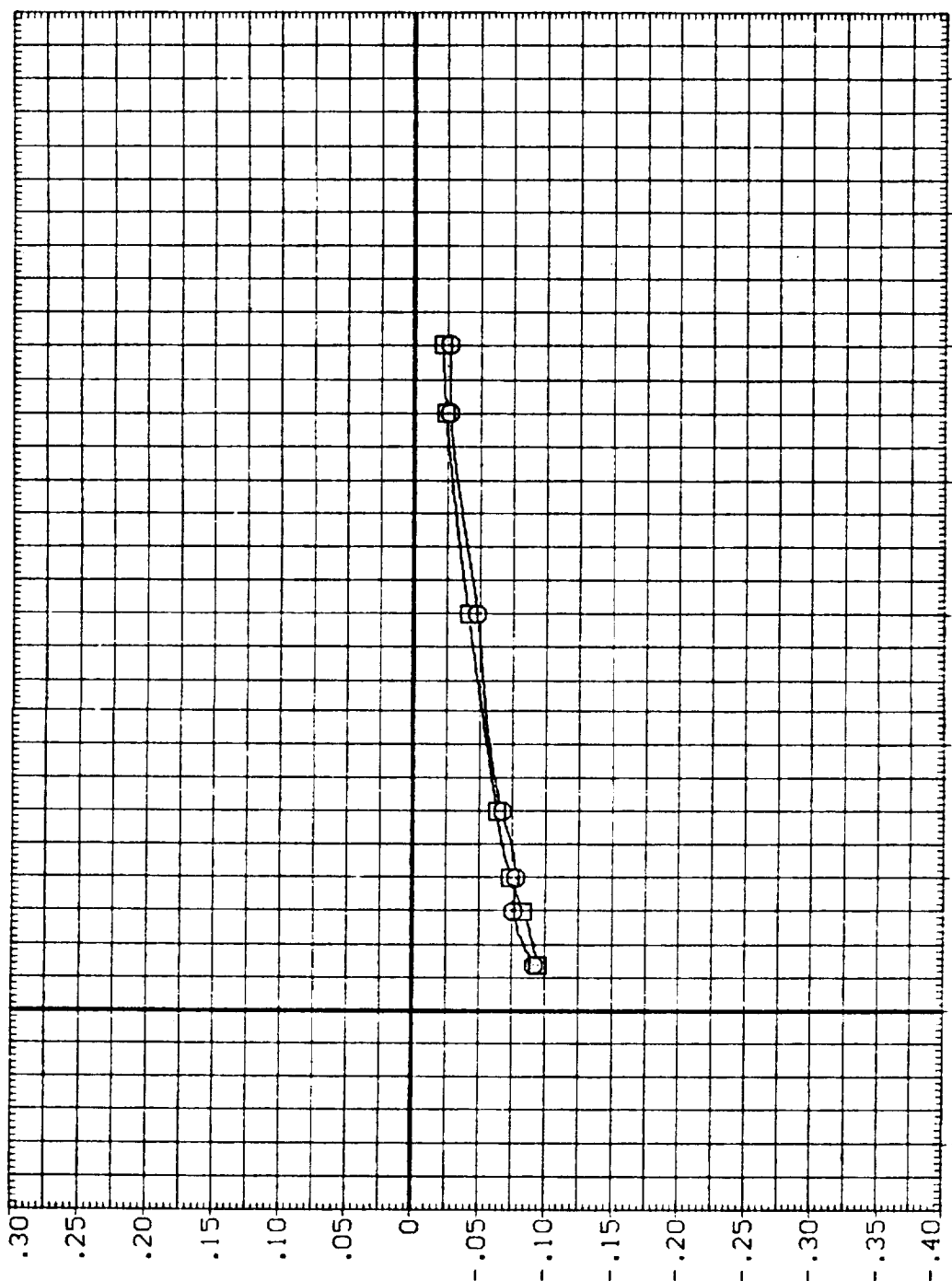


FIG. 56 EFFECT OF ORB TAILCONE ON CARRIER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)  
 (B) ALPHAC = 2.00

DATA SET SYMBOL  
(PNH037)  
(PNH024)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 Q3S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 Q2S1 (CARRIER DATA)

IORB  
6.000  
6.000

ELEVON  
.000  
.000

MACH  
.800  
.500

STAB  
-1.000  
-1.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2346.0400 IN.  
XMRP 1339.9000 IN.  
YMRP .0000 IN.  
ZMRP 190.7500 IN.  
SCALE .0125

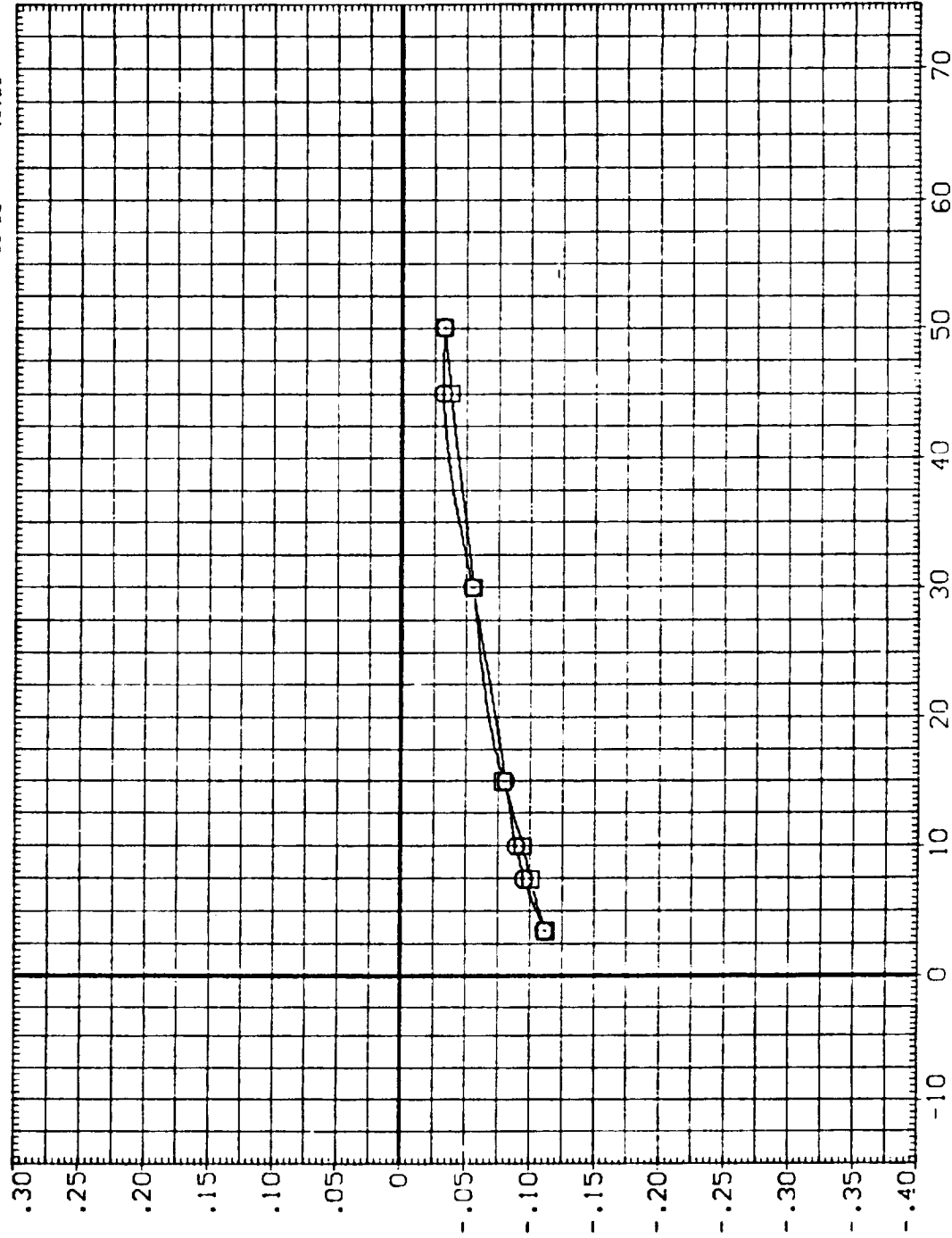


FIG. 56 EFFECT OF ORB TAILCONE ON CARRIER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)  
(C)ALPHAC= 4.00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORB    ELEVON    MACH    STAB    REFERENCE INFORMATION

(PNH037)	ARC 14-120(CA23B)	747/1 AT1	03S1 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0003	50. FT.
(PNH024)	ARC 14-120(CA23B)	747/1 AT1	02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800	IN.
								BREF 2348.0400	IN.
								XMRP 1339.9000	IN. XC
								YMRP .0000	IN. YC
								ZMRP 190.7500	IN. ZC
								SCALE .0125	

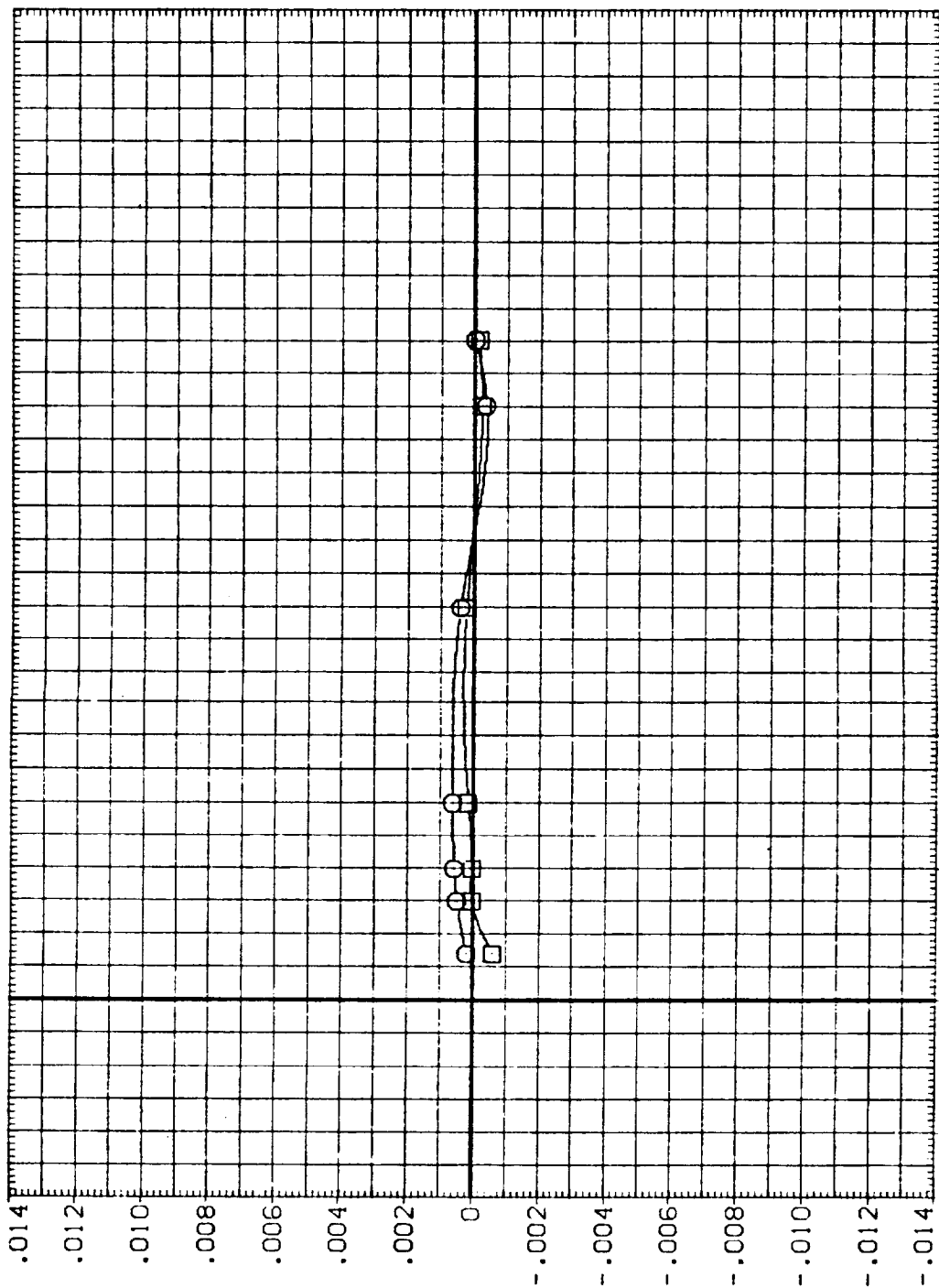


FIG. 56 EFFECT OF ORB TAILCONE ON CARRIER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)  
(A)ALPHAC= .00

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (PNH037) 8 ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
 (PNH024) ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
 6.000 .000 .600 -1.000 SREF 5500.0000 SQ.FT.  
 6.000 .000 .600 -1.000 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

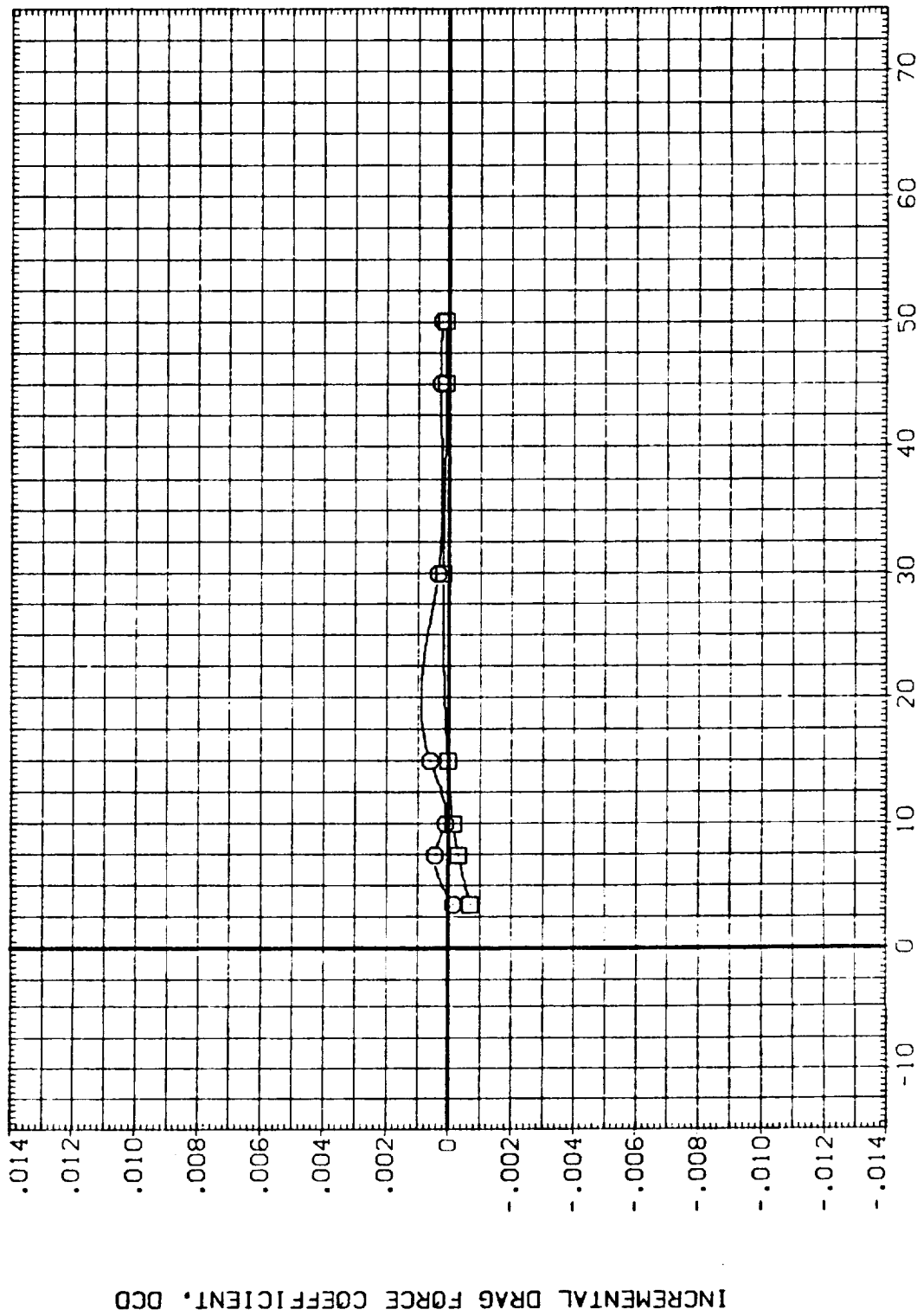


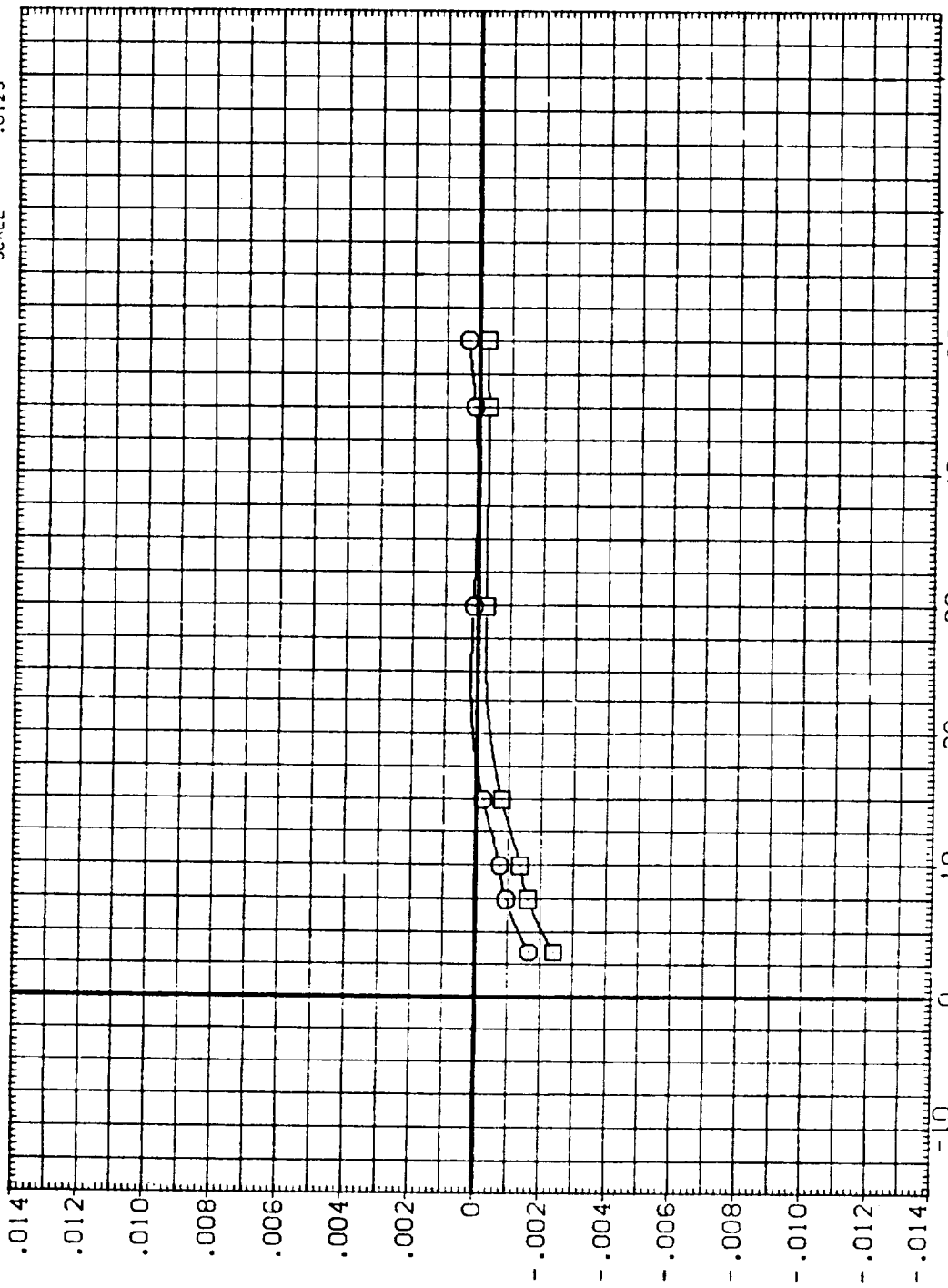


FIG. 56 EFFECT OF ORB TAILCONE ON CARRIER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)  
 (B)ALPHAC= 2.00 PAGE 467

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(PNH037)  ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)  
(PNH024)  ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)

IORB ELEVON MACH STAB REFERENCE INFORMATION  
6.000 .000 .600 -1.000 SREF 5500.0000 SQ.FT.  
6.000 .000 .600 -1.000 LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 150.7500 IN. ZC  
SCALE .0125



INCREMENTAL DRAG FORCE COEFFICIENT, DCD

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 56 EFFECT OF ORB TAILCONE ON CARRIER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)

(C)ALPHAC= 4.00

DATA SET SYMBOL  
(PNH037)  
(PNH024)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)

IORB 6.000  
6.000

ELEVON .000  
.000

MACH .600  
.600

STAB -1.000  
-1.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.5000 IN. XG  
YMRP .0000 IN. YG  
ZMRP 190.7500 IN. ZC  
SCALE .0125

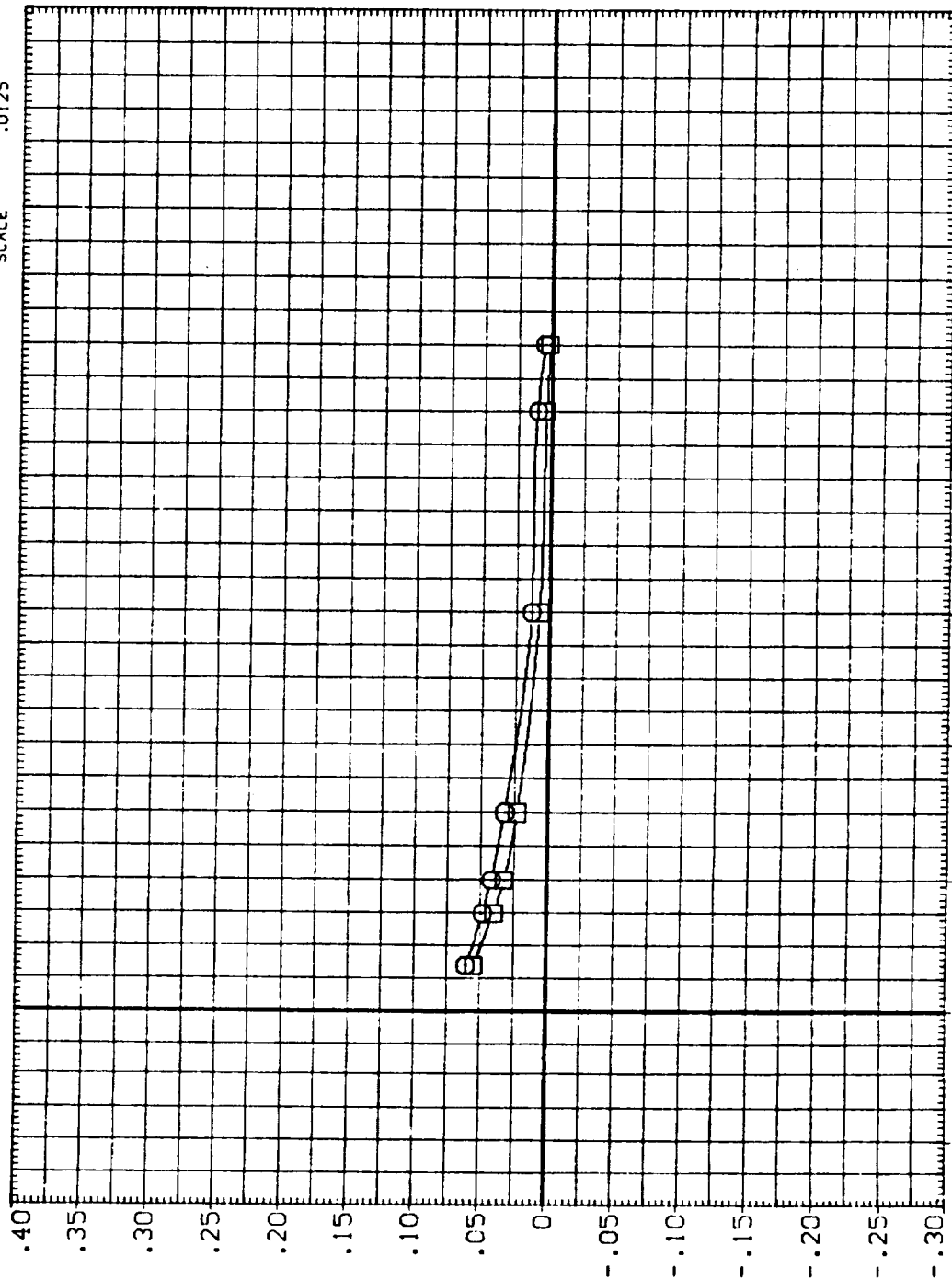


FIG. 56 EFFECT OF ORB TAILCONE ON CARRIER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)  
(A)ALPAC= .00

DATA SET SYMBOL  
(PNH037)  
(PNH024)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/I AT1 03S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/I AT1 02S1 (CARRIER DATA)

IORB ELEVON MACH STAB  
6.000 .000 .500 -1.000  
6.000 .000 .500 -1.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

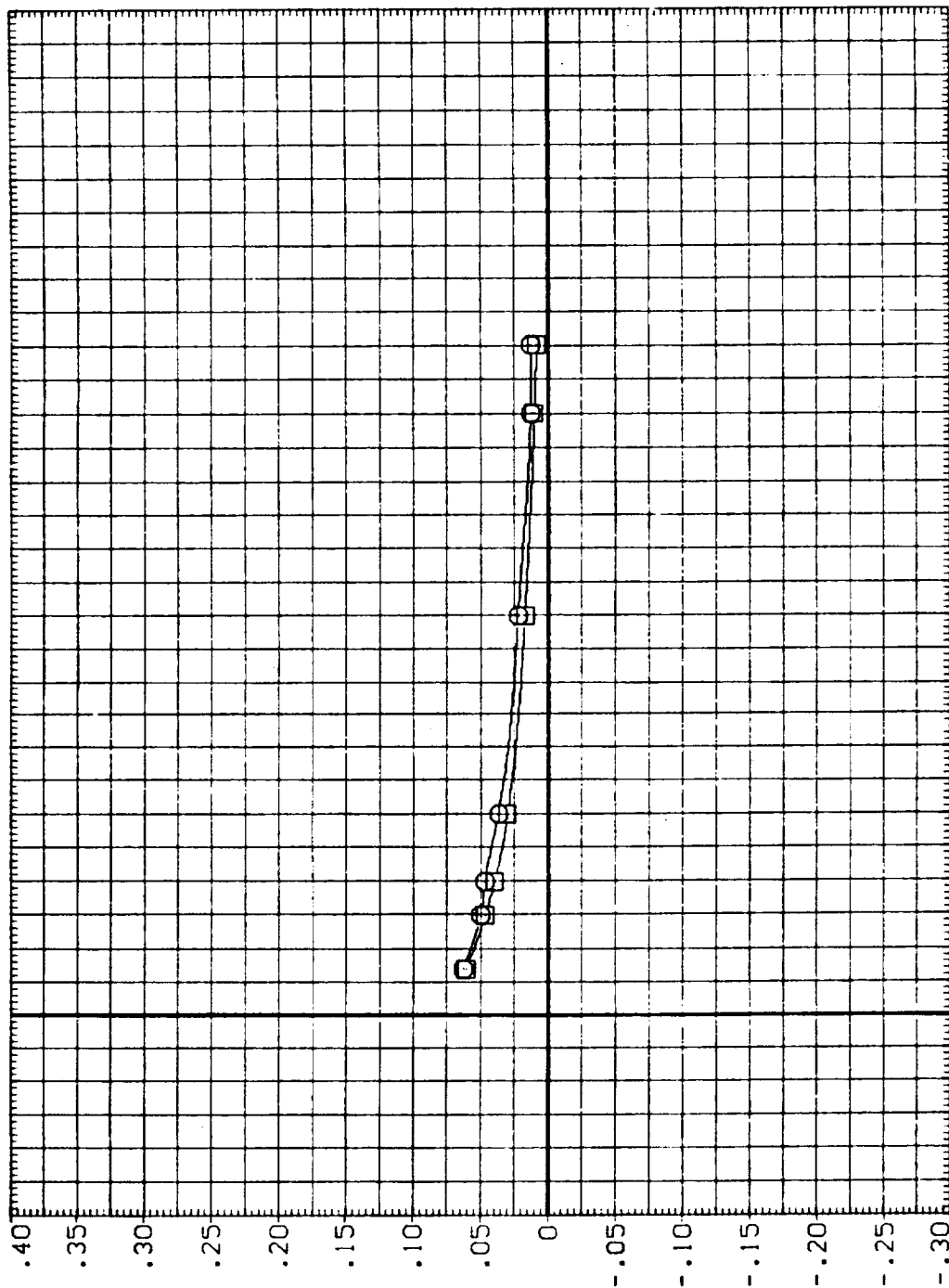


FIG. 56 EFFECT OF ORB TAILCONE ON CARRIER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)  
(B)ALPHAC= 2.00



DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (PNH037)    □    ARC 14-120(CA238)    747/1 AT1 0351 (CARRIER DATA)  
 (PNH024)    □    ARC 14-120(CA238)    747/1 AT1 0351 (CARRIER DATA)

IORB    ELEVON    MACH    STAB  
 6.000    .000    .600    -1.000  
 6.000    .000    .600    -1.000

REFERENCE INFORMATION  
 SREF    5500.0000    SQ.FT.  
 LREF    327.7800    IN.  
 BREF    2348.0400    IN.  
 XMRP    1339.9000    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0125

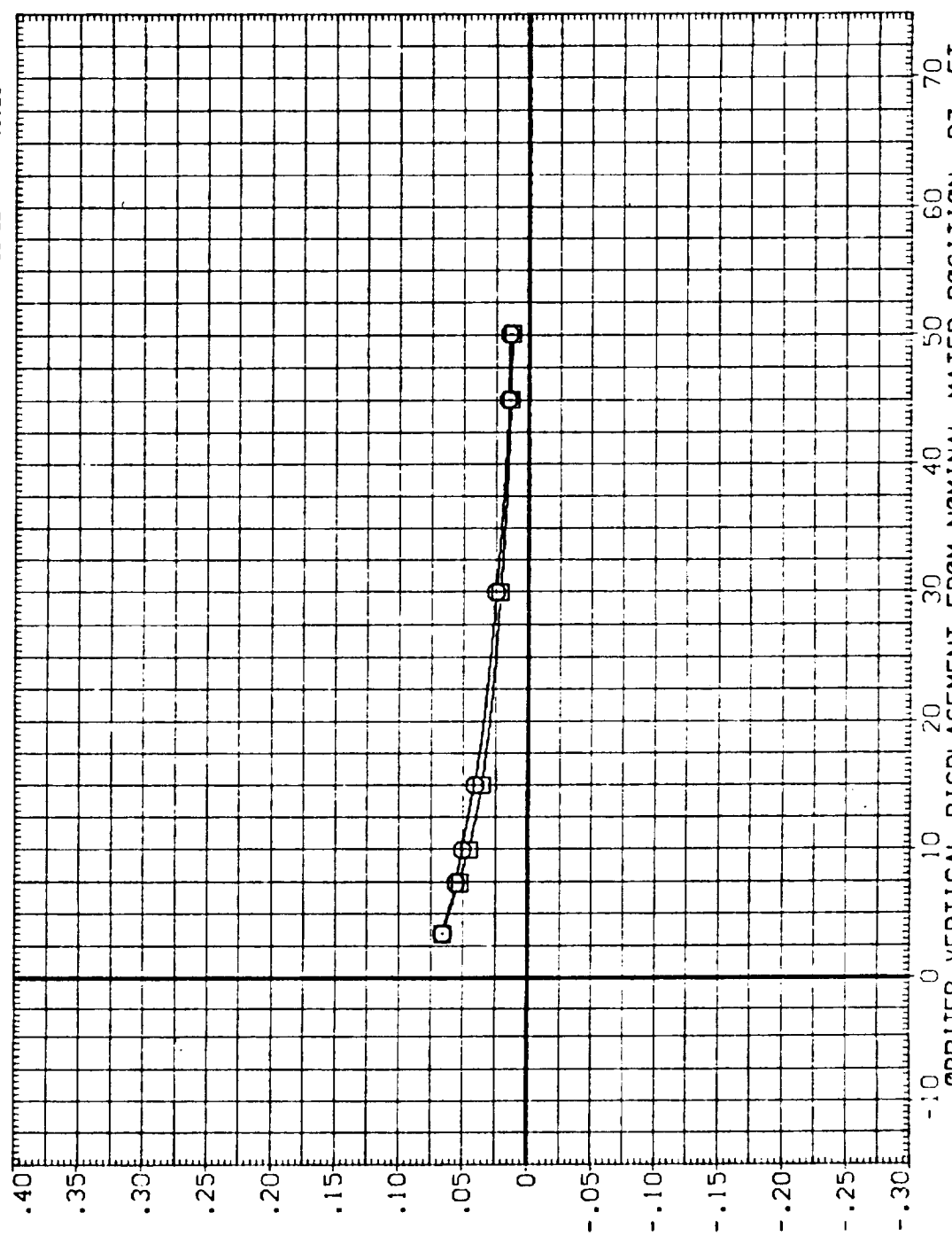


FIG. 56 EFFECT OF ORB TAILCONE ON CARRIER(STAB=-1.0 DEG.,IORB=6.0 DEG.,ELEVON=0)  
 (C)ALPHA= 4.00    PAGE 471

REFERENCE INFORMATION	
SREF	2690.0000 SO.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN. X0
YMRP	.0000 IN. Y0
ZMRP	375.0000 IN. Z0
SCALE	.0125



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DATA SET SYMBOL (4NH037)  
(4NH024)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

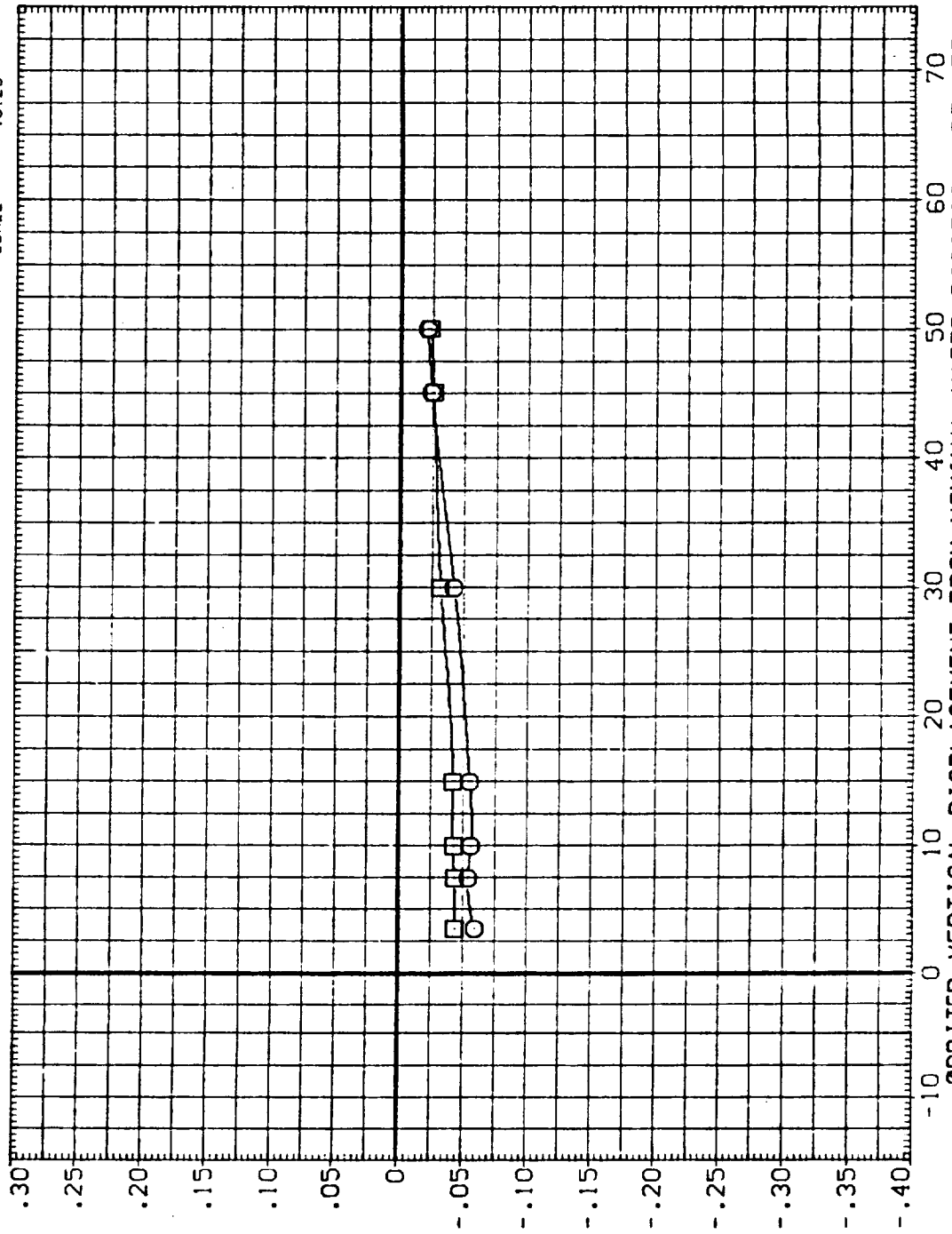



FIG. 57 EFFECT OF ORB TAILCONE ON ORBITER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)  
(B)ALPHAC= 2.00

DATA SET SYMBOL (4NH037) (4NH024)  CONFIGURATION DESCRIPTION ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA) 747/1 AT1 Q2S1 (ORBITER DATA) ORB 6.000 6.000 ELEVON .000 .000 MACH .600 .600 STAB -1.000 -1.000 REFERENCE INFORMATION SREF 2690.0000 SQ.FT. LREF 474.8100 IN. BREF 936.6800 IN. XMRP 1109.0000 IN. YMRP .0000 IN. ZMRP 375.0000 IN. SCALE .0125

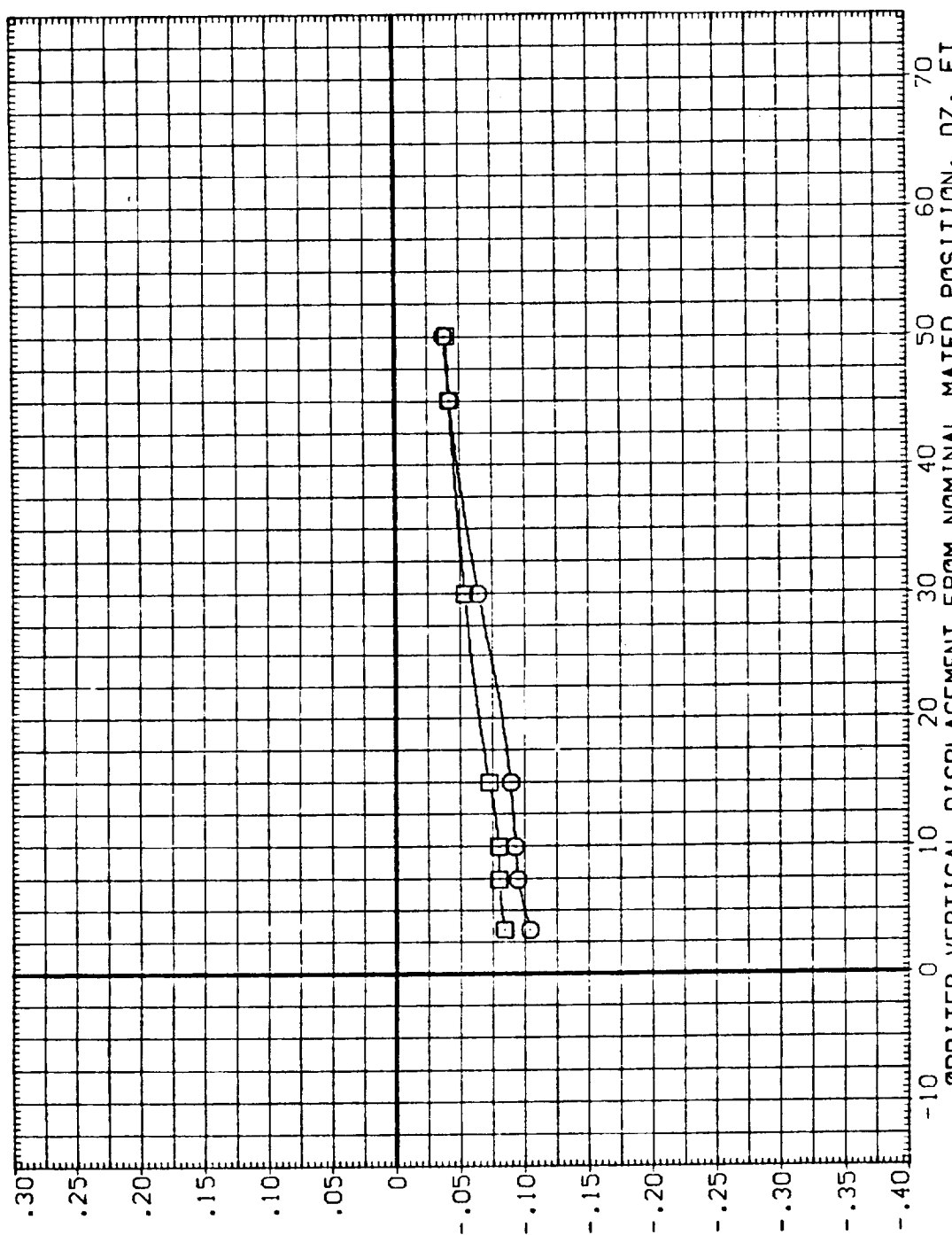


FIG. 57 EFFECT OF ORB TAILCONE ON ORBITER (STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0) (C)ALPHAC= 4.00 PAGE 474

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

DATA SET SYMBOL  
(4NH037)  
(4NH024)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)  
ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)

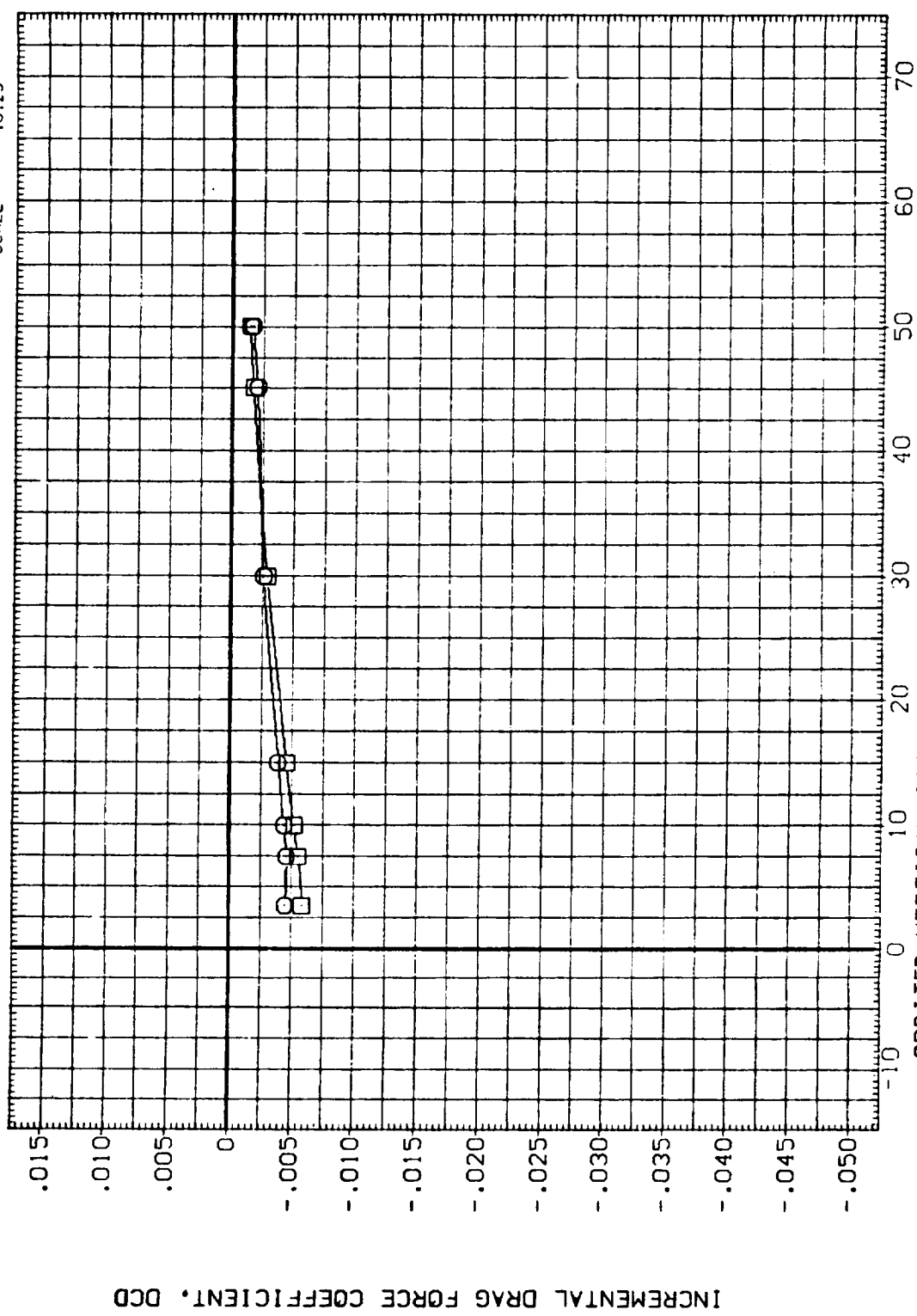
IORB  
6.000  
6.000

ELEVON  
.000  
.000

MACH  
.600  
.600

STAB  
-1.000  
-1.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION. DZ, FT.  
FIG. 57 EFFECT OF ORB TAILCONE ON ORBITER(STAB=-1.0 DEG.,IORB=6.0 DEG.,ELEVON=0)  
(A)ALPHAC= .00

DATA SET SYMBOL  
(4NH037)  
(4NH024)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 03S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)

IORB ELEVON MACH STAB  
6.000 .000 .600 -1.000

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125

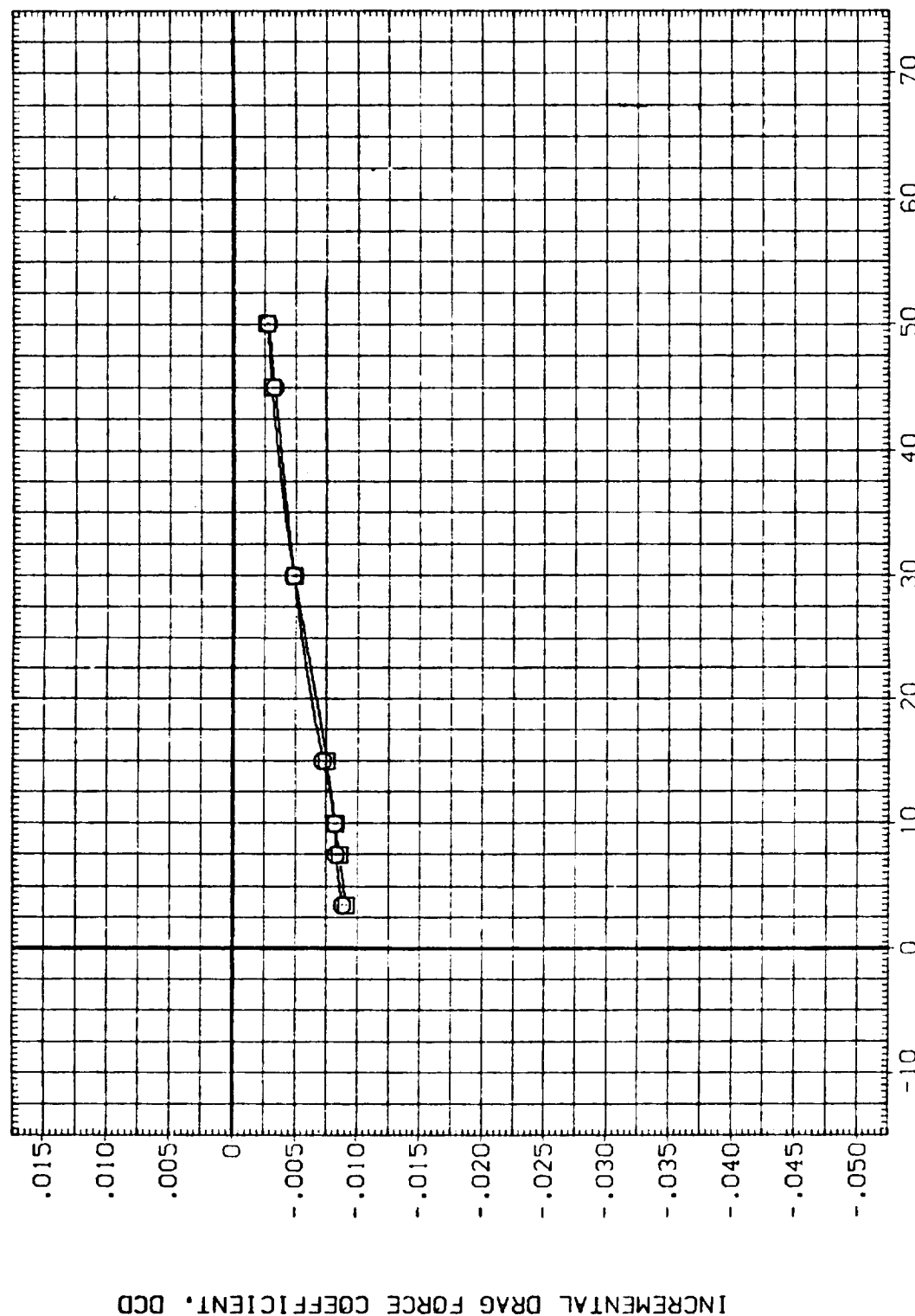


FIG. 57 EFFECT OF ORB TAILCONE ON ORBITER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)  
(B)ALPHAC= 2.00  
PAGE 476

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORRB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	6.000	.000	.500	-1.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						YMRP 1109.0000 IN. X0
						ZMRP .0000 IN. Y0
						SCALE 375.0000 IN. Z0

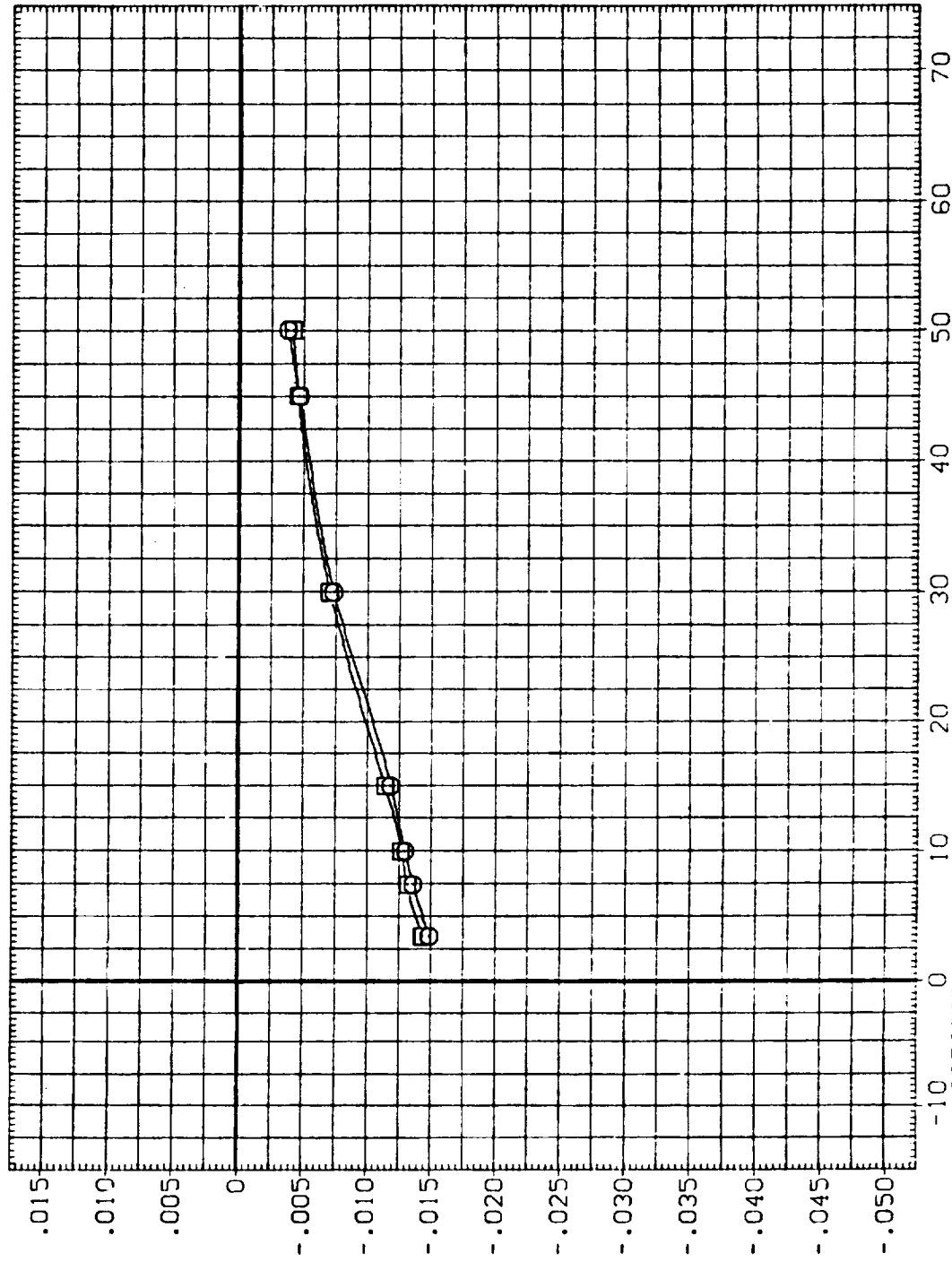




FIG. 57 EFFECT OF ORB TAILCONE ON ORBITER (STAB=-1.0 DEG., ORB=6.0 DEG., ELEVON=0)  
(C)ALPHAC= 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (4NH037)  ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)  
 (4NH024)  ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP 375.0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

STAB  
 MACH .600  
 ELEVON .000  
 ORB 6.000  
 STAB -1.000

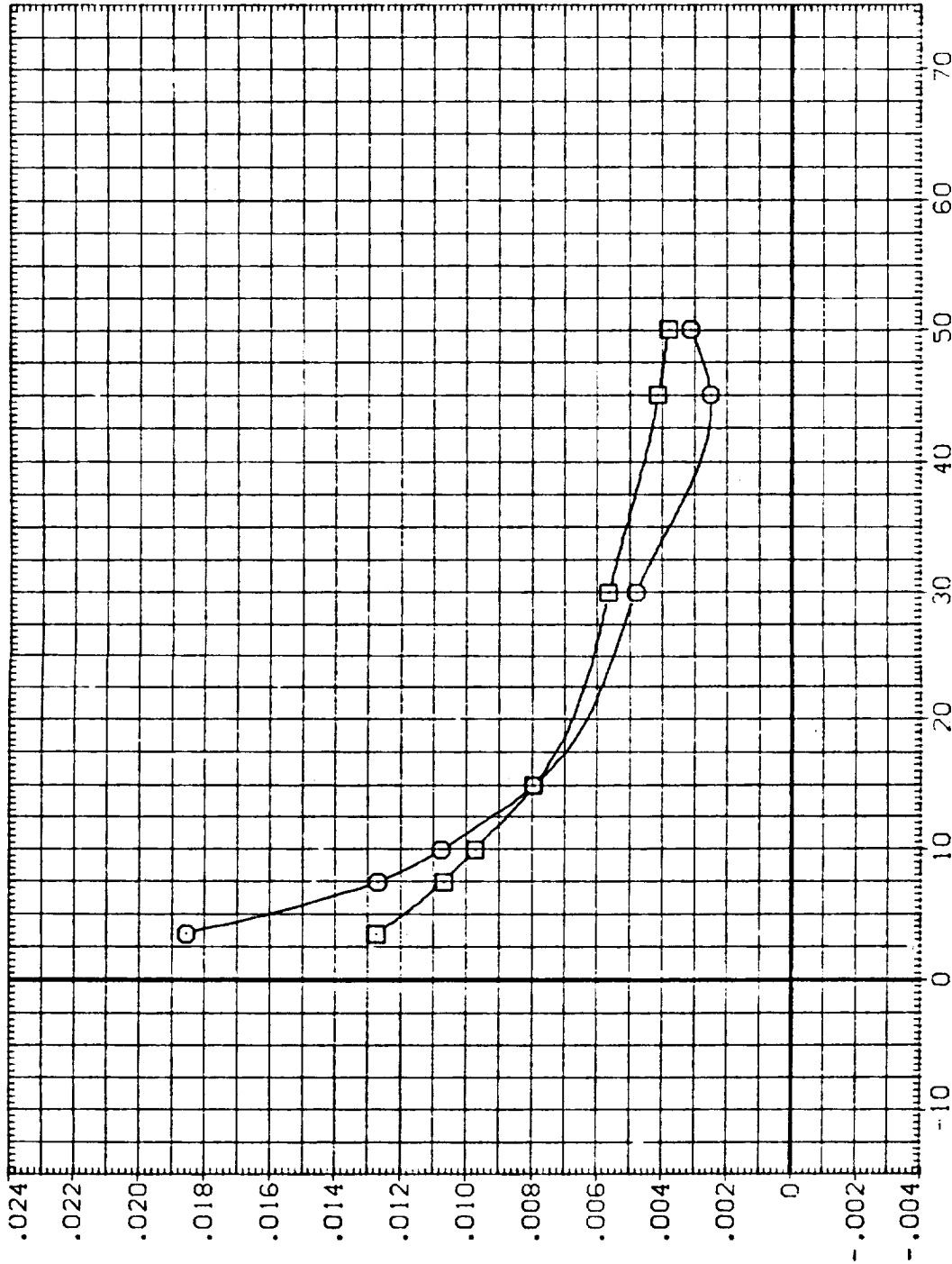


FIG. 57 EFFECT OF ORB TAILCONE ON ORBITER (STAB=-1.0 DEG., ORB=6.0 DEG., ELEVON=0)

(A)ALPHAC= .00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITTER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITTER DATA)	6.000	.000	.600	-1.000	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

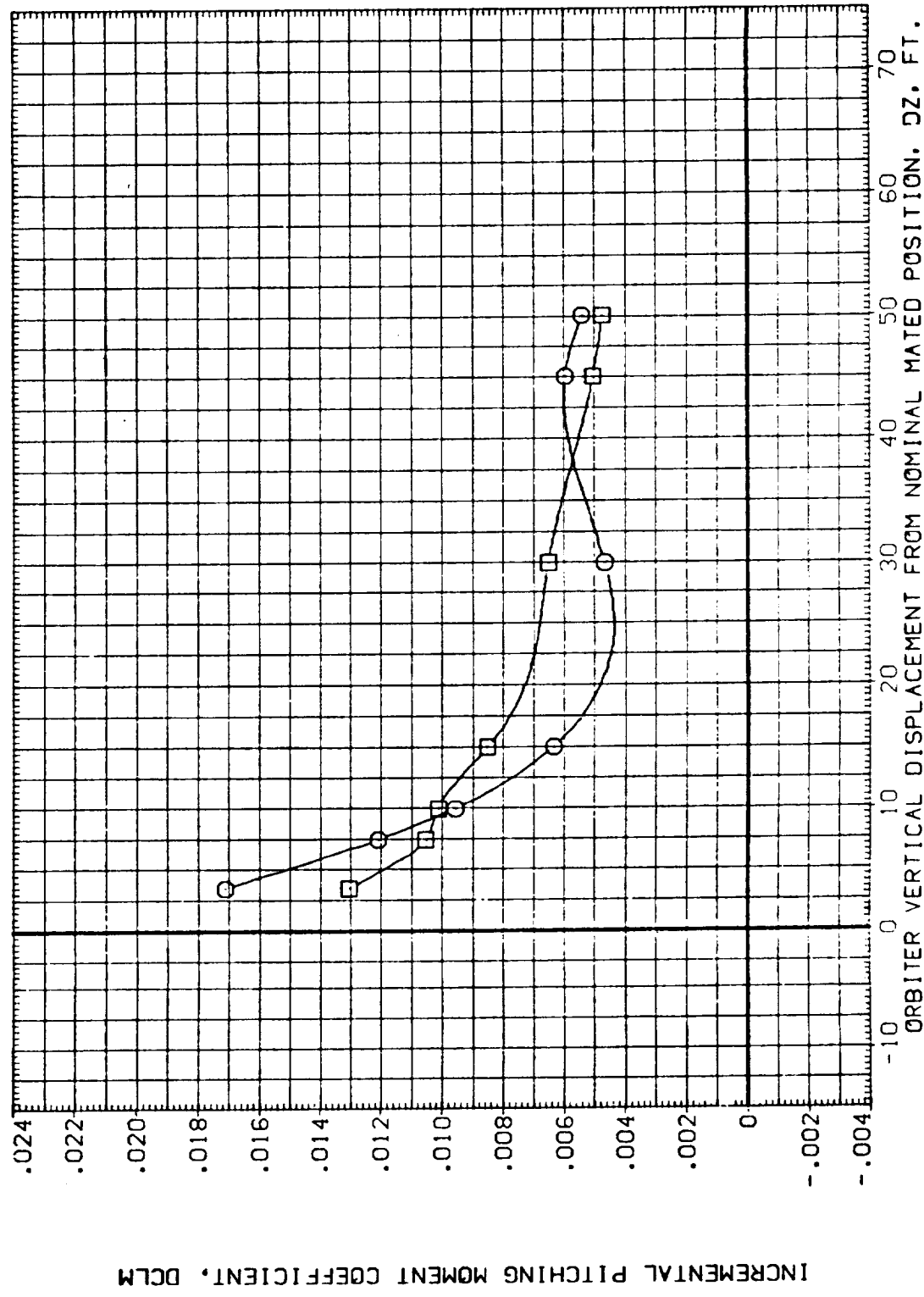


FIG. 57 EFFECT OF ORB TAILCONE ON ORBITTER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)  
 (B)ALPHAC= 2.00 PAGE 479

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN. X0
YMRP	.0000 IN. Y0
ZMRP	375.0000 IN. Z0
SCALE	.0125

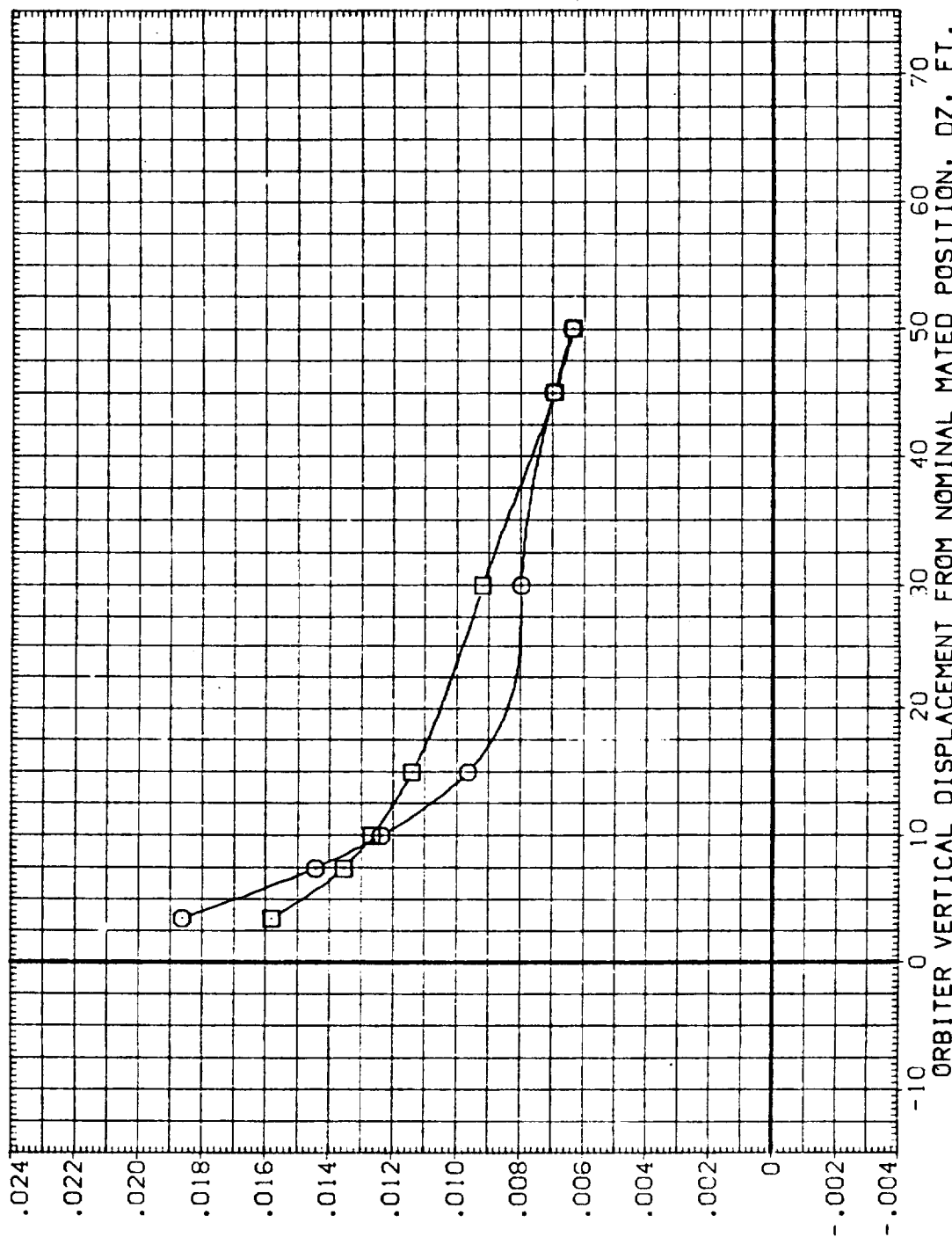
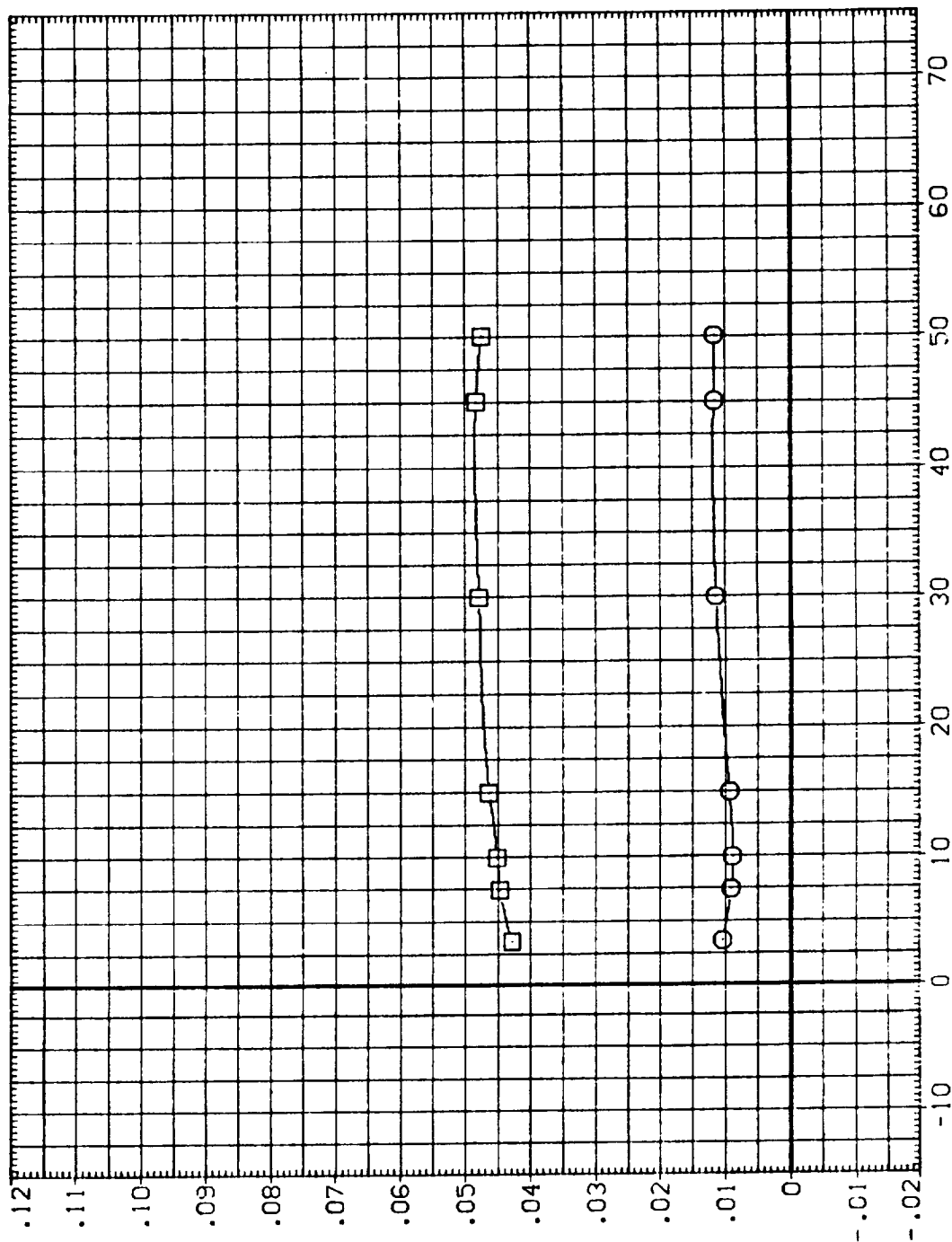


FIG. 57 EFFECT OF ORB TAILCONE ON ORBITER(STAB=-1.0 DEG., IORB=6.0 DEG., ELEVON=0)

[[{"C": "C", "ALPHA": 4.0}]]

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(JNH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.500	SREF 5500.0000 SQ.FT.
(JNH039)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.500	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



SIDE FORCE COEFFICIENT, CY

FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IORB= 6.0 DEG.)

SIDE FORCE COEFFICIENT, CY

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(JNH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(JNH039)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

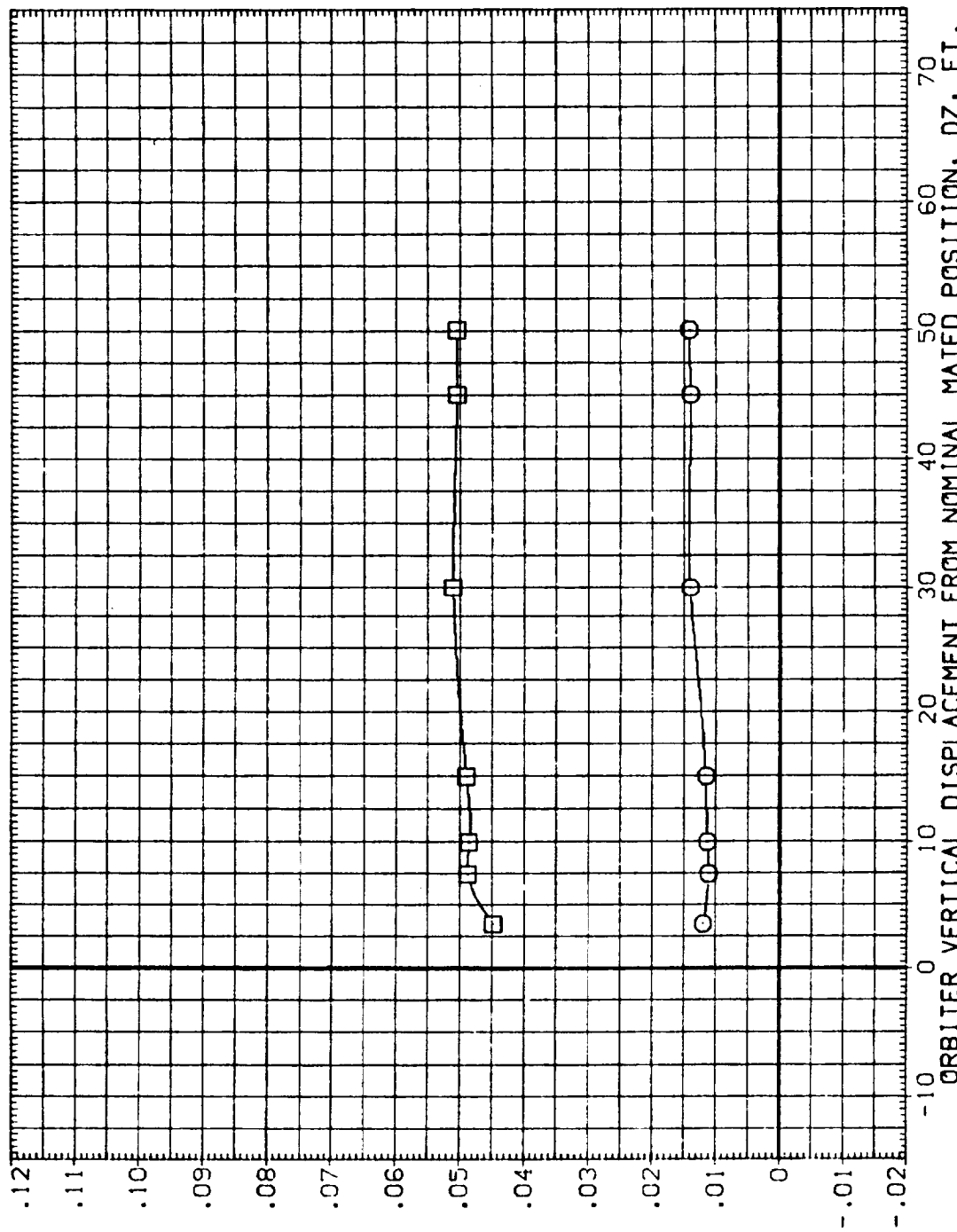


FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IORB= 6.0 DEG.)

(B)ALPHAC= 4.00 PAGE 482

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		RUDDER		ELEVON	IORB	MACH	REFERENCE INFORMATION	
(JNH013)	ARC 14-120(CA23B)	747/1	AT1 02S1 (CARRIER DATA)	.000	5.000	5.000	6.000	.600	SREF	5500.0000 SQ. FT.
(JNH039)	ARC 14-120(CA23B)	747/1	AT1 02S1 (CARRIER DATA)	10.000	5.000	5.000	6.000	.600	LREF	327.7800 IN.
									BREF	2348.0400 IN.
									XMRP	1339.9000 IN. XC
									YMRP	.0000 IN. YC
									ZMRP	190.7500 IN. ZC
									SCALE	.0125

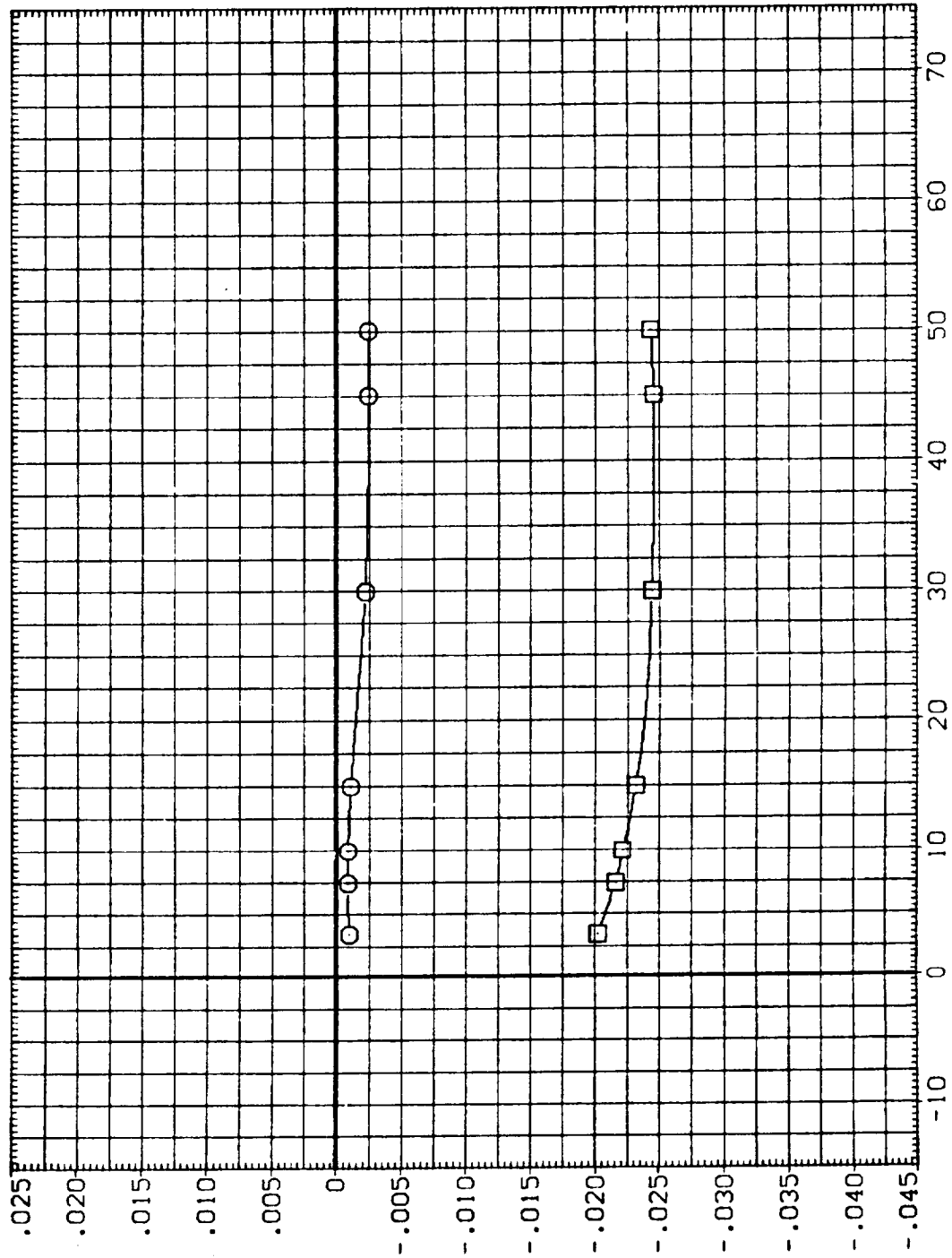


FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IORB= 6.0 DEG.)

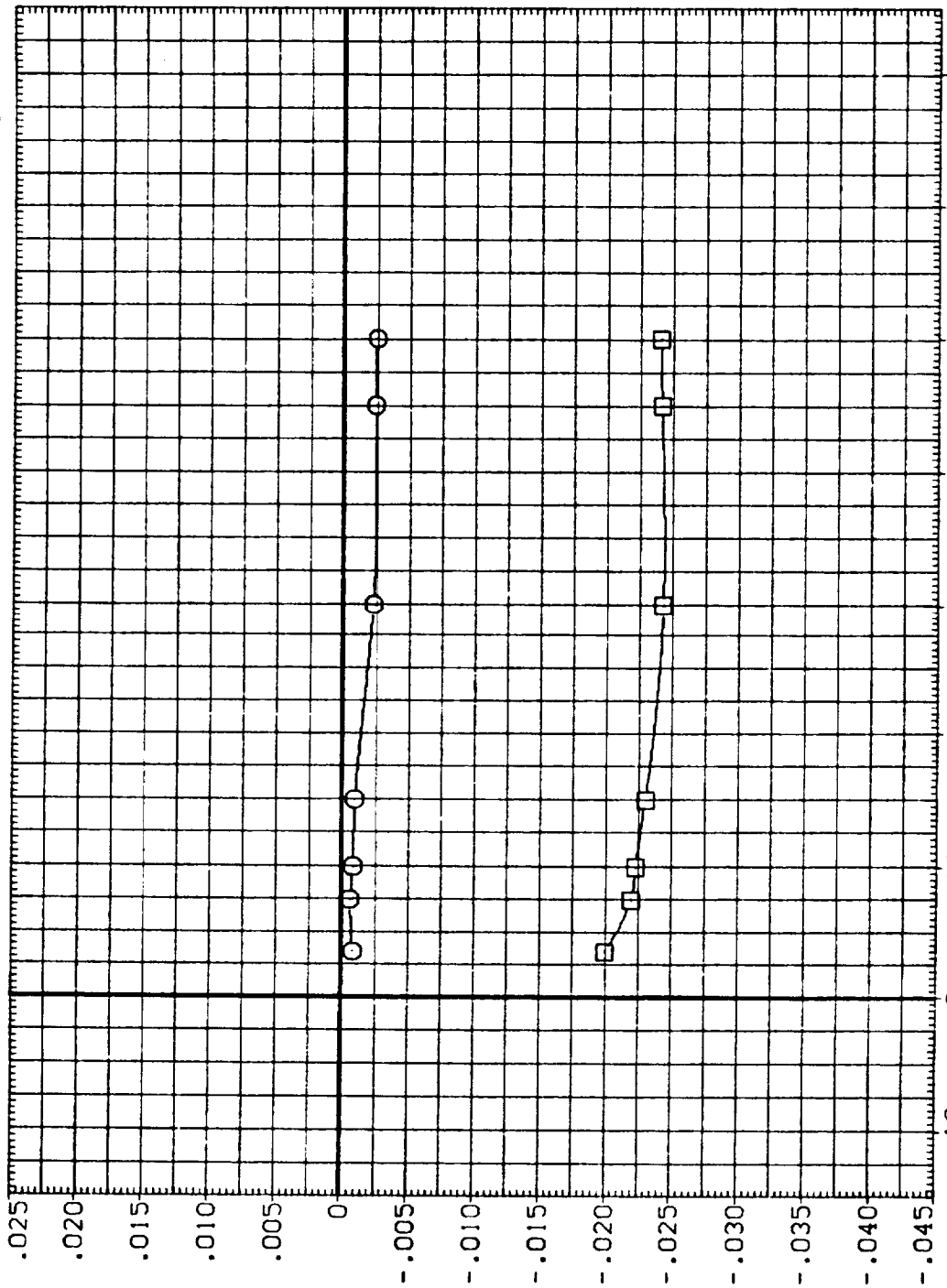
(A)ALPHAC= 2.00

DATA SET SYMBOL  
(JNH013)  
(JNH039)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

RUDDER  
.000  
10.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125



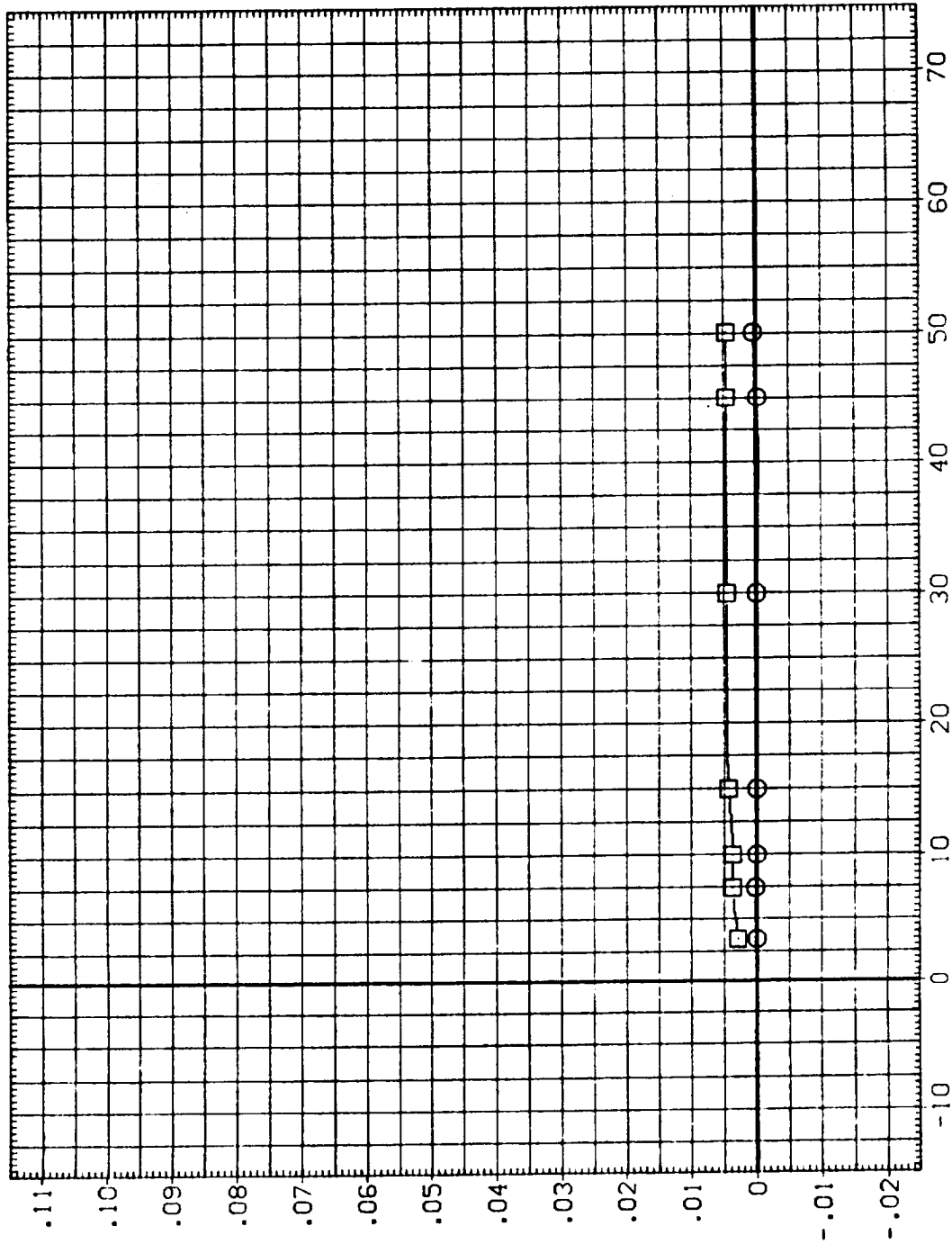
YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, OZ, FT.

FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, 1/C OFF, (IORB= 6.0 DEG.)

(B)ALPHAC= 4.00

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		RUDDER		ELEVON		IORB		MACH		REFERENCE INFORMATION			
(JNH013)	□	ARC 14-120(CA23B)	747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF	5500.0000	SQ.FT.					
(JNH039)	□	ARC 14-120(CA23B)	747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF	327.7800	IN.					
								BREF	2348.0400	IN.					
								XMRP	1339.9000	IN. XC					
								YMRP	.0000	IN. YC					
								ZMRP	190.7500	IN. ZC					
								SCALE	.0125						



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IORB= 6.0 DEG.)

(A)ALPHAC= 2.00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
(JNH013)    ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
(JNH039)    ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

REFERENCE INFORMATION  
SREF 5500.0000 SO.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XHRP 1339.9000 IN. XC  
YHRP .0000 IN. YC  
ZHRP 190.7500 IN. ZC  
SCALE .0125

MACH .600  
IORB 6.000  
ELEVON 5.000  
RUDDER 10.000

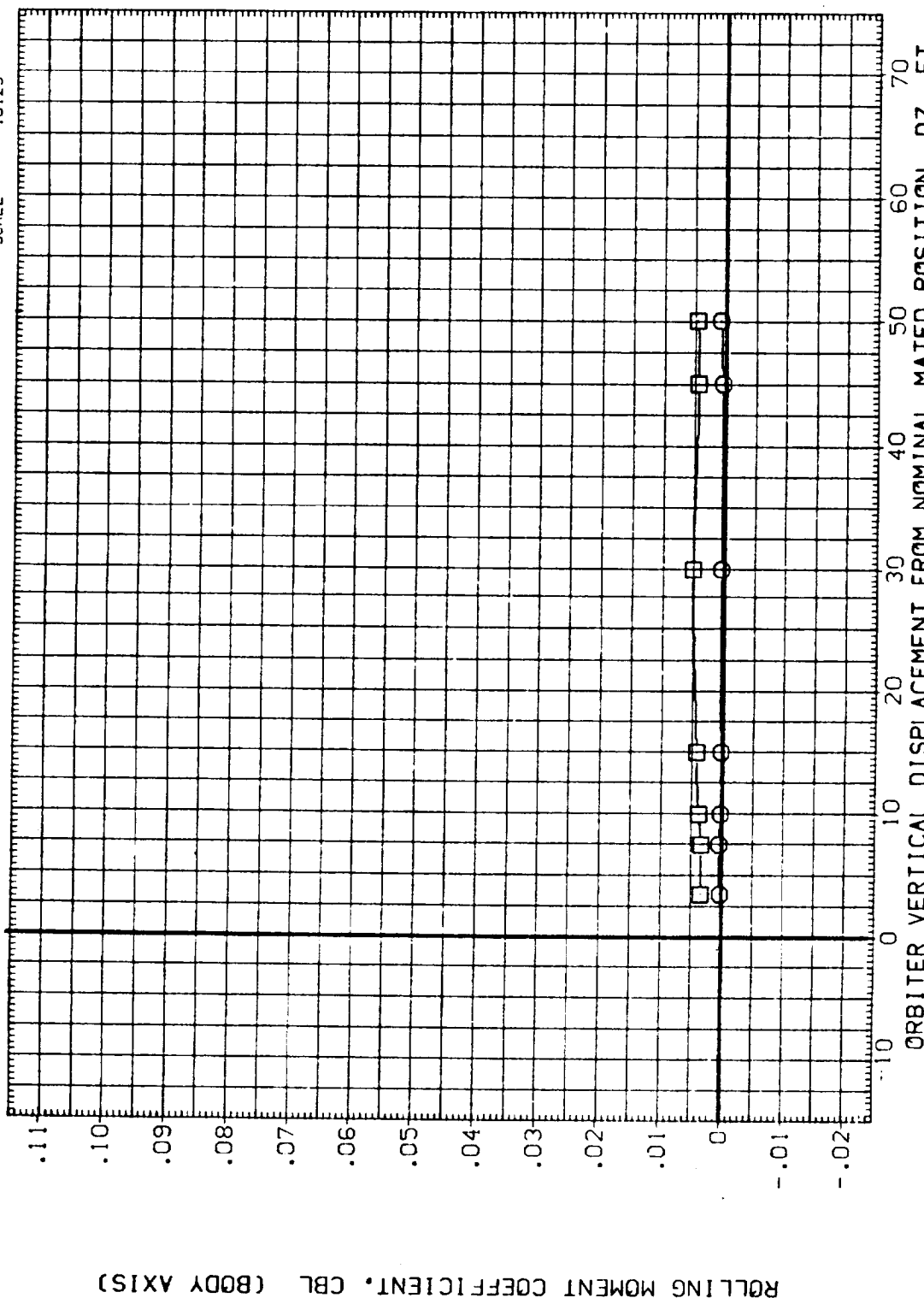


FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IORB= 6.0 DEG.)  
(B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(MNH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SO.FT.
(PNH039)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

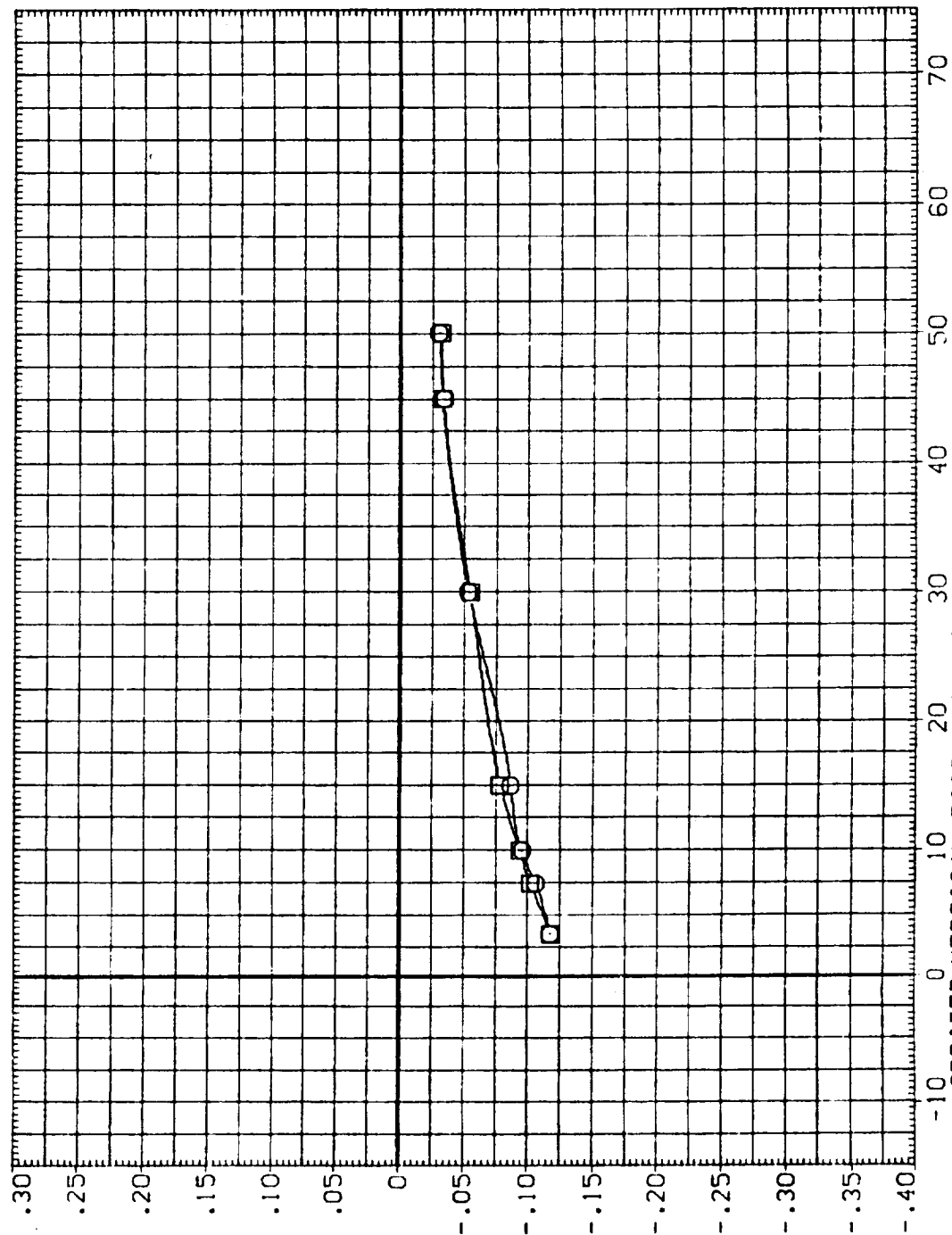


FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IORB= 6.0 DEG.)

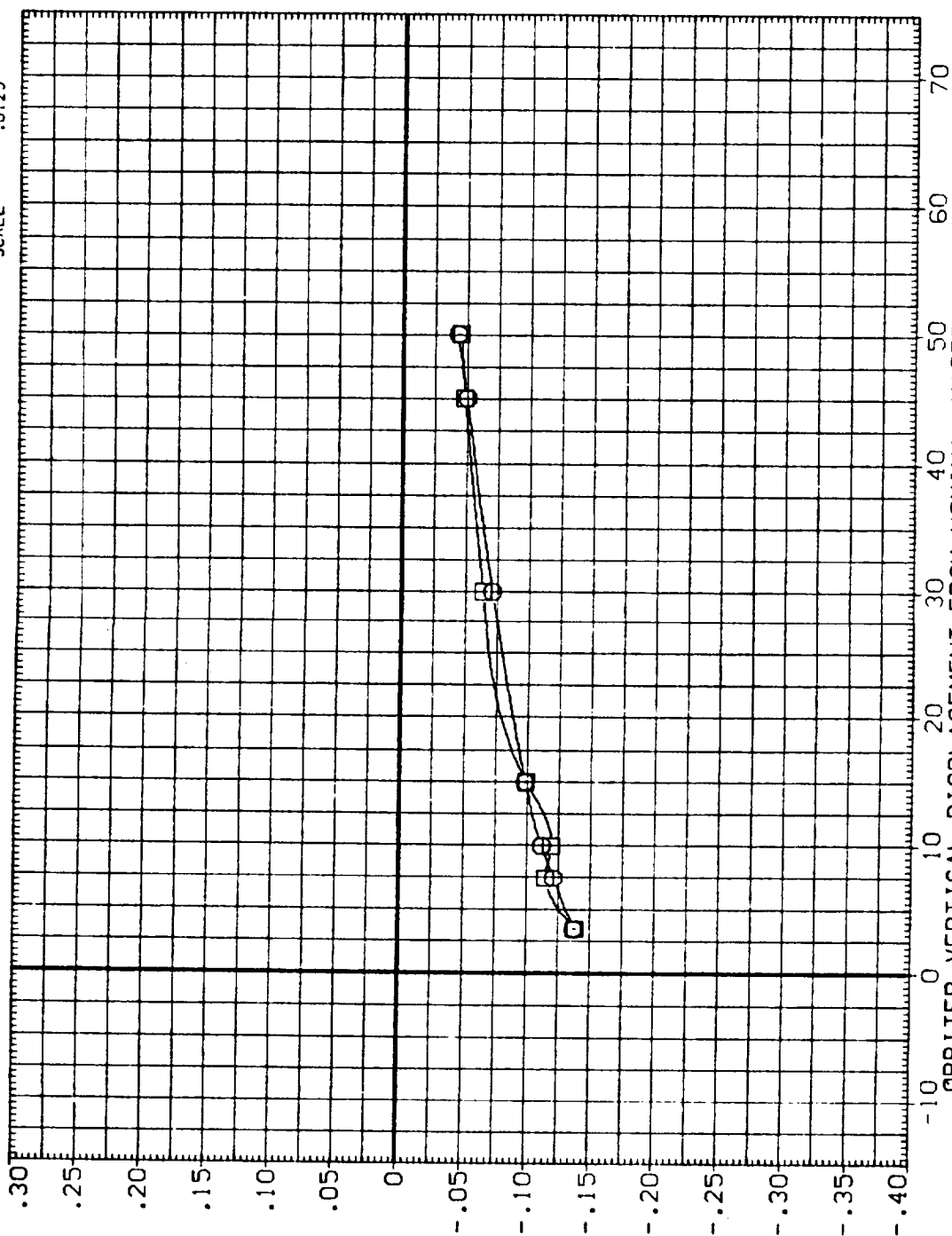
(A) ALPHA = 2.00

DATA SET SYMBOL  
(MNH013)  
(PNH039)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

RUDDER ELEVON IORB MACH  
.000 5.000 6.000  
10.000 5.000 6.000

REFERENCE INFORMATION  
SREF 5500.0000 50.FT.  
LREF 327.7800 IN.  
BREF 2346.0400 IN.  
XMRP 1339.5000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN ZC  
SCALE .0125



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, 1/C OFF, (IORB= 6.0 DEG.)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IOB8	MACH	REFERENCE INFORMATION
(MNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SQ.FT.
(PNH039)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2348.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

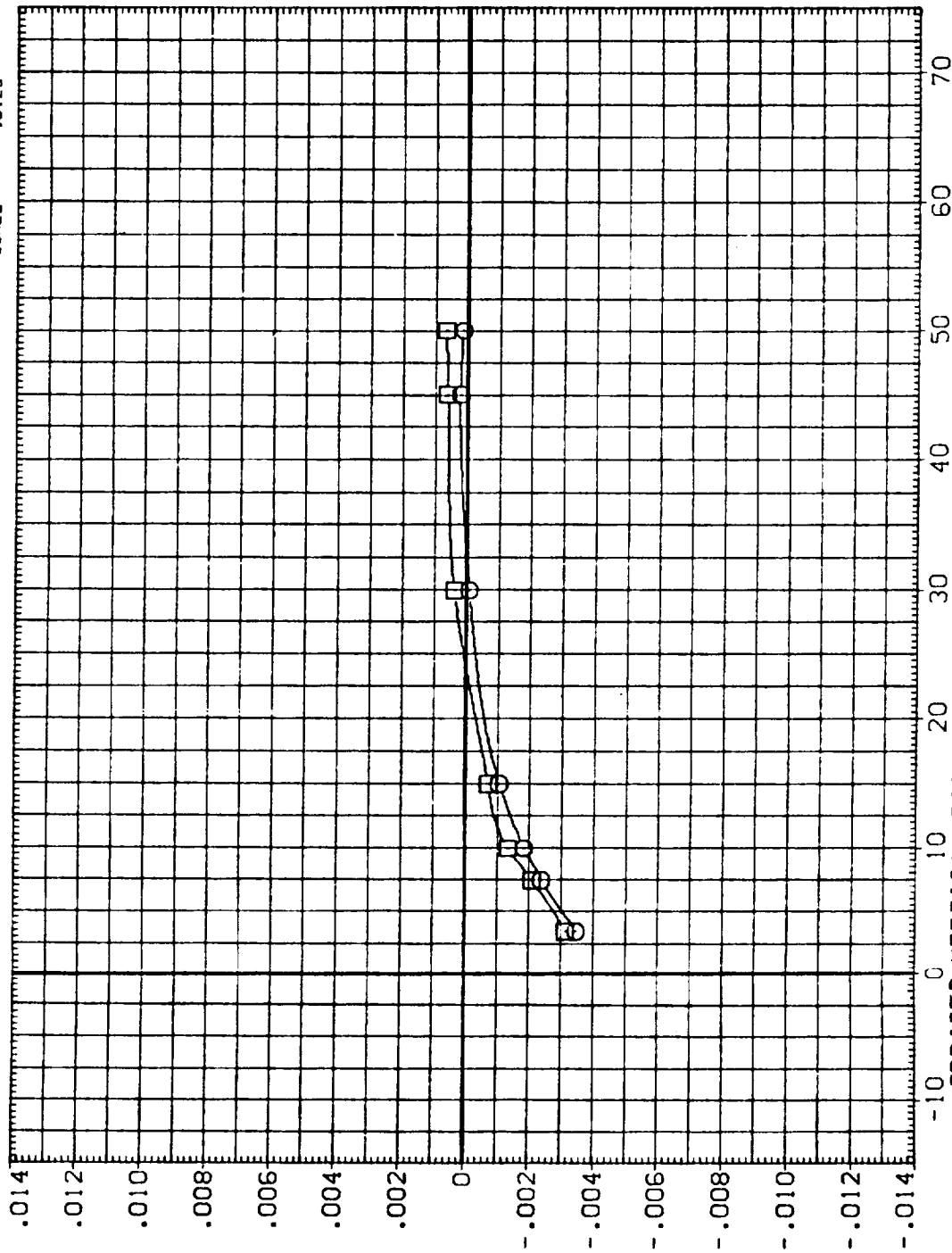


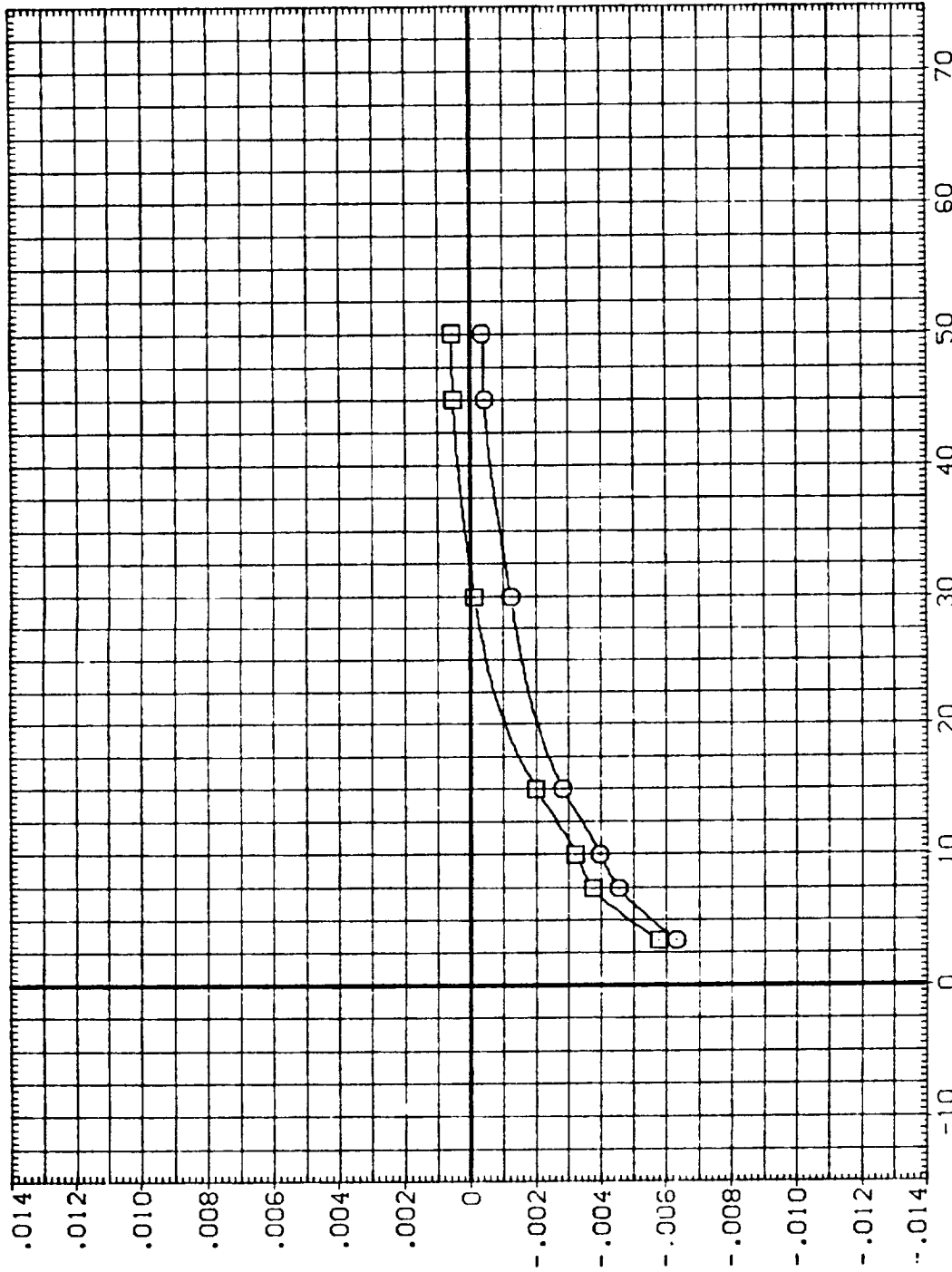
FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IOB8= 6.0 DEG.)

(A)ALPHAC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (MNH013) 8 ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)  
 (PINH039) 8 ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)

RUDDER ELEVON IORB MACH  
 .000 5.000 .600  
 10.000 5.000 .600

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125



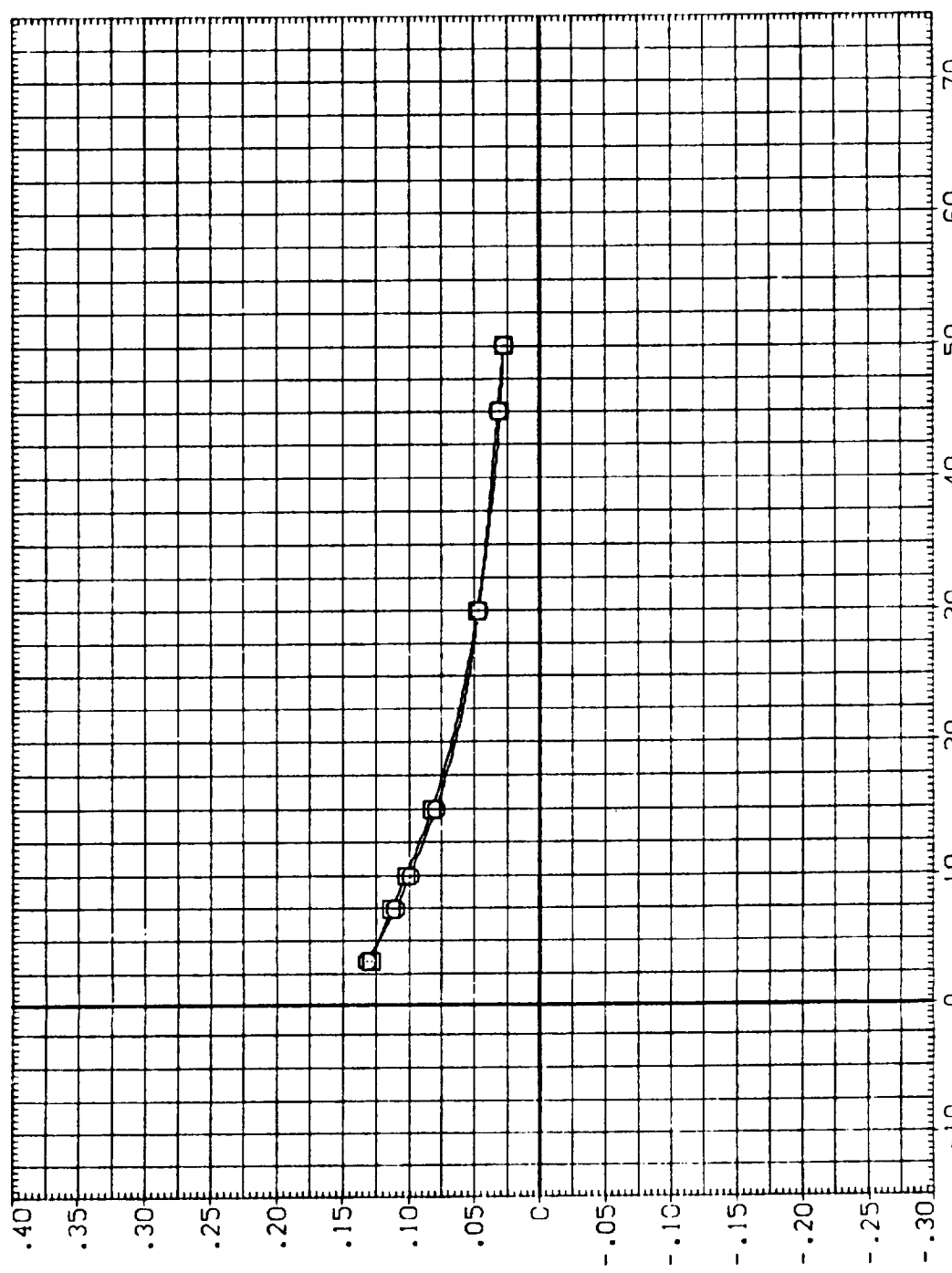
INCREMENTAL DRAG FORCE COEFFICIENT, DCD

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IORB= 6.0 DEG.)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(MNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	.000	5.000	6.000	.600	SREF 5500.0000 SO.FT.
(PNH039)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	10.000	5.000	6.000	.600	LREF 327.7800 IN.
						BREF 2346.0400 IN.
						XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IORB= 6.0 DEG.)

(A)ALPHAC= 2.00

DATA SET SYMBOL (MNH013) (PNH039)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)  
ARC 14-120(CA238) 747/1 AT1 Q2S1 (CARRIER DATA)

RUDDER ELEVON 10RB MACH  
.000 5.000 5.000  
10.000 6.000 6.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ. FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

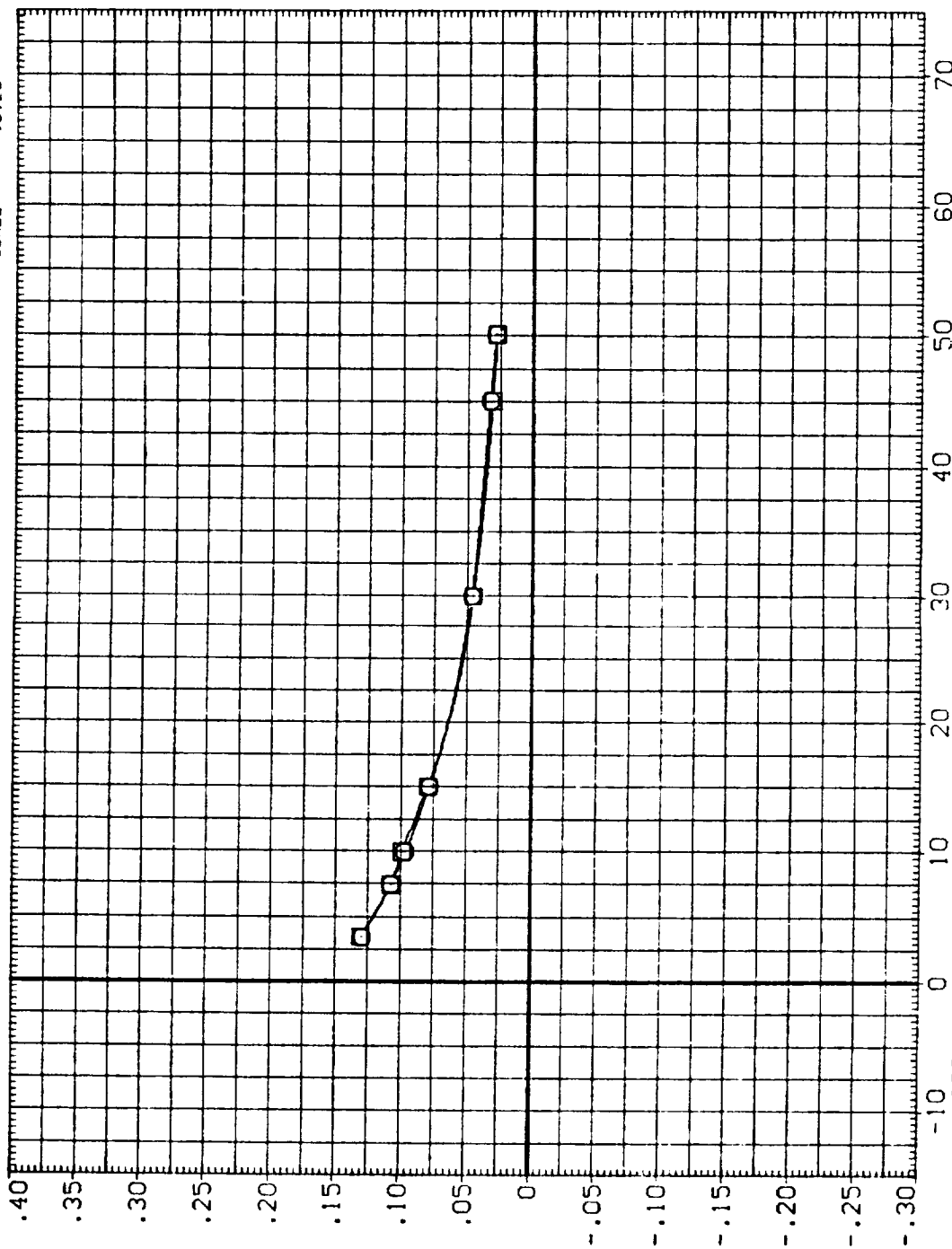
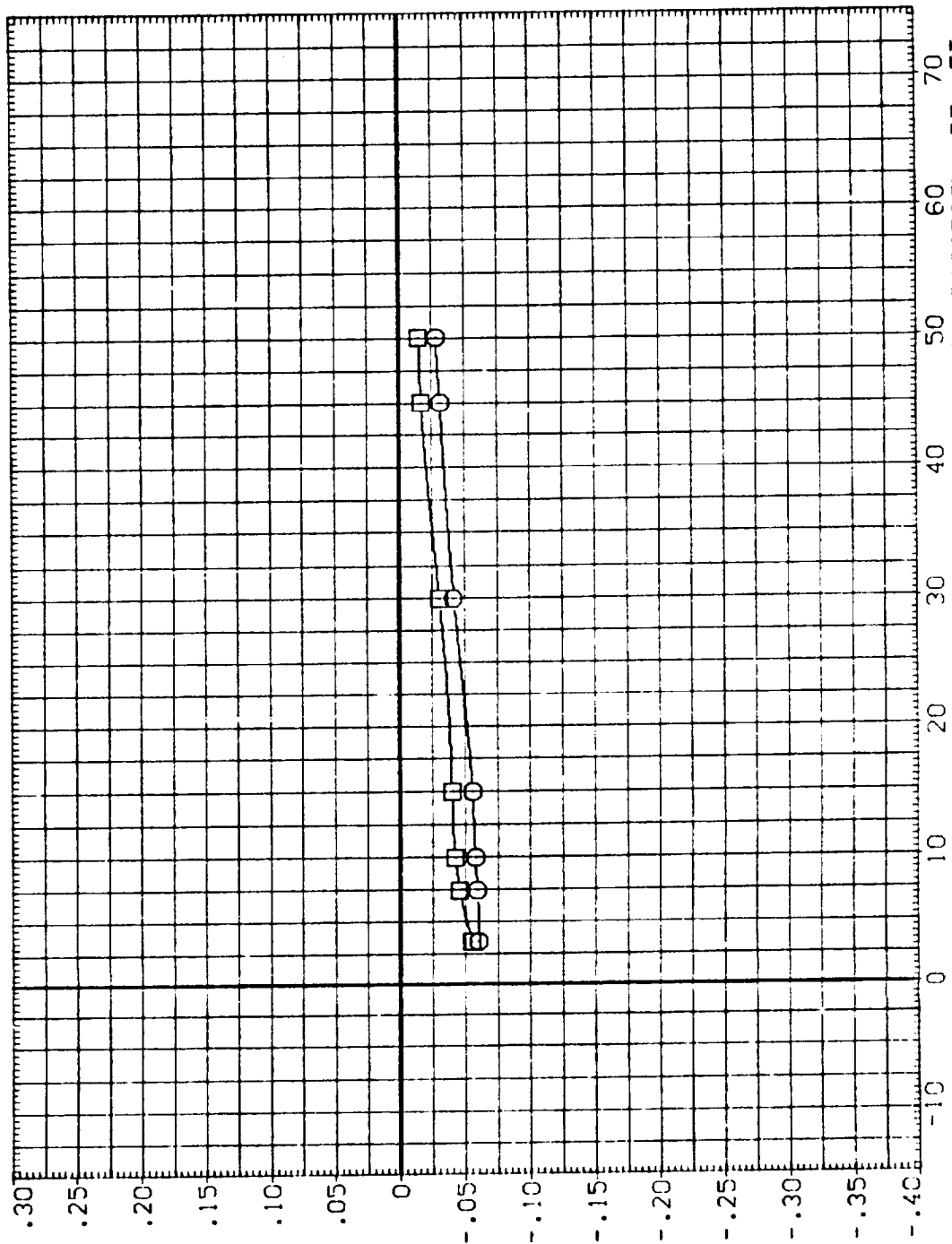


FIG. 58 ORBITER RUDDER EFFECTIVENESS ON CARRIER, T/C OFF, (IORB= 6.0 DEG.)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(ONH013)	ARC [4-120(CA23B) 747/1 AT] 02S1 (ORBITER DATA)	.000	5.000	6.000	.500	SREF 2690.0000 SQ.FT.
(4NH039)	ARC [4-120(CA23B) 747/1 AT] 02S1 (ORBITER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



ORBITER RUDDER EFFECTIVENESS ON ORBITER, T/C OFF, (IORB= 6.0 DEG.)

FIG. 59 ORBITER RUDDER EFFECTIVENESS ON ORBITER, T/C OFF, (IORB= 6.0 DEG.)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(CN4013)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NHC39)	ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

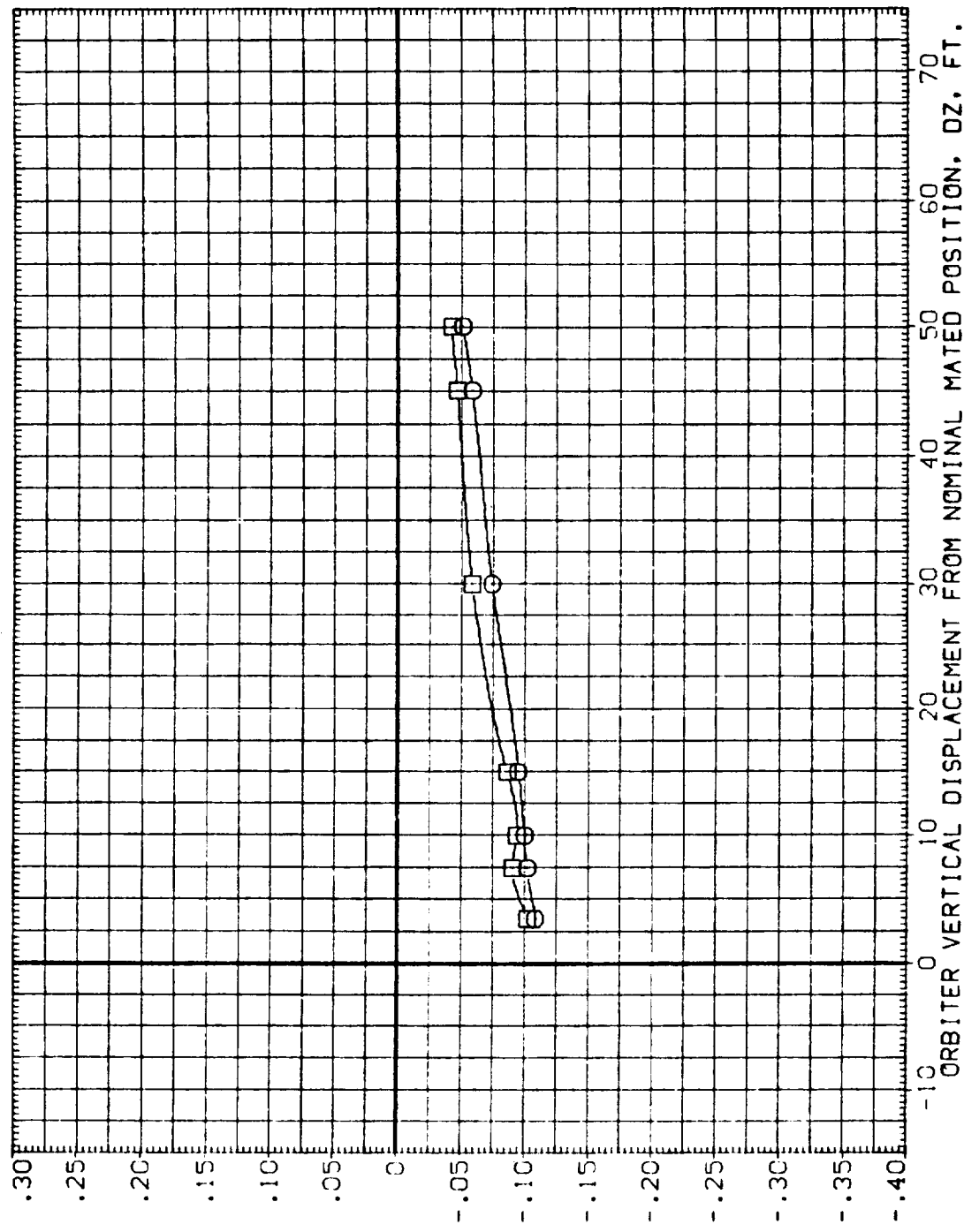


FIG. 59 ORBITER RUDDER EFFECTIVENESS ON ORBITER, T/C OFF, (IORB= 6.0 DEG.)  
 (B)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(0NH013)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NH039)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

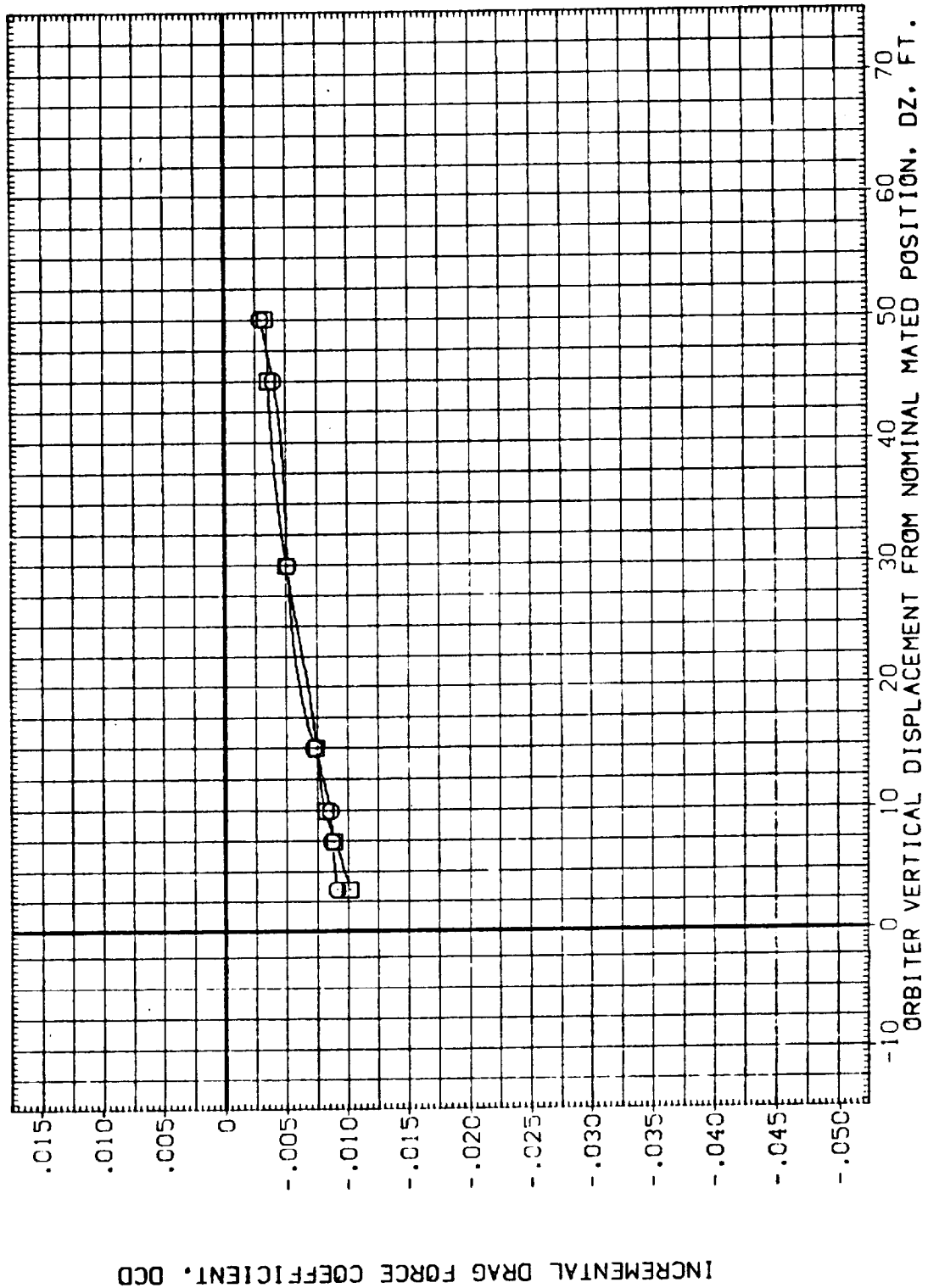


FIG. 59 ORBITER RUDDER EFFECTIVENESS ON ORBITER, T/C OFF, (IORB= 6.0 DEG.)

(A)ALPHAC= 2.00

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN. X0
YMRP	.0000 IN. Y0
ZMRP	375.0000 IN. Z0
SCALE	.0125

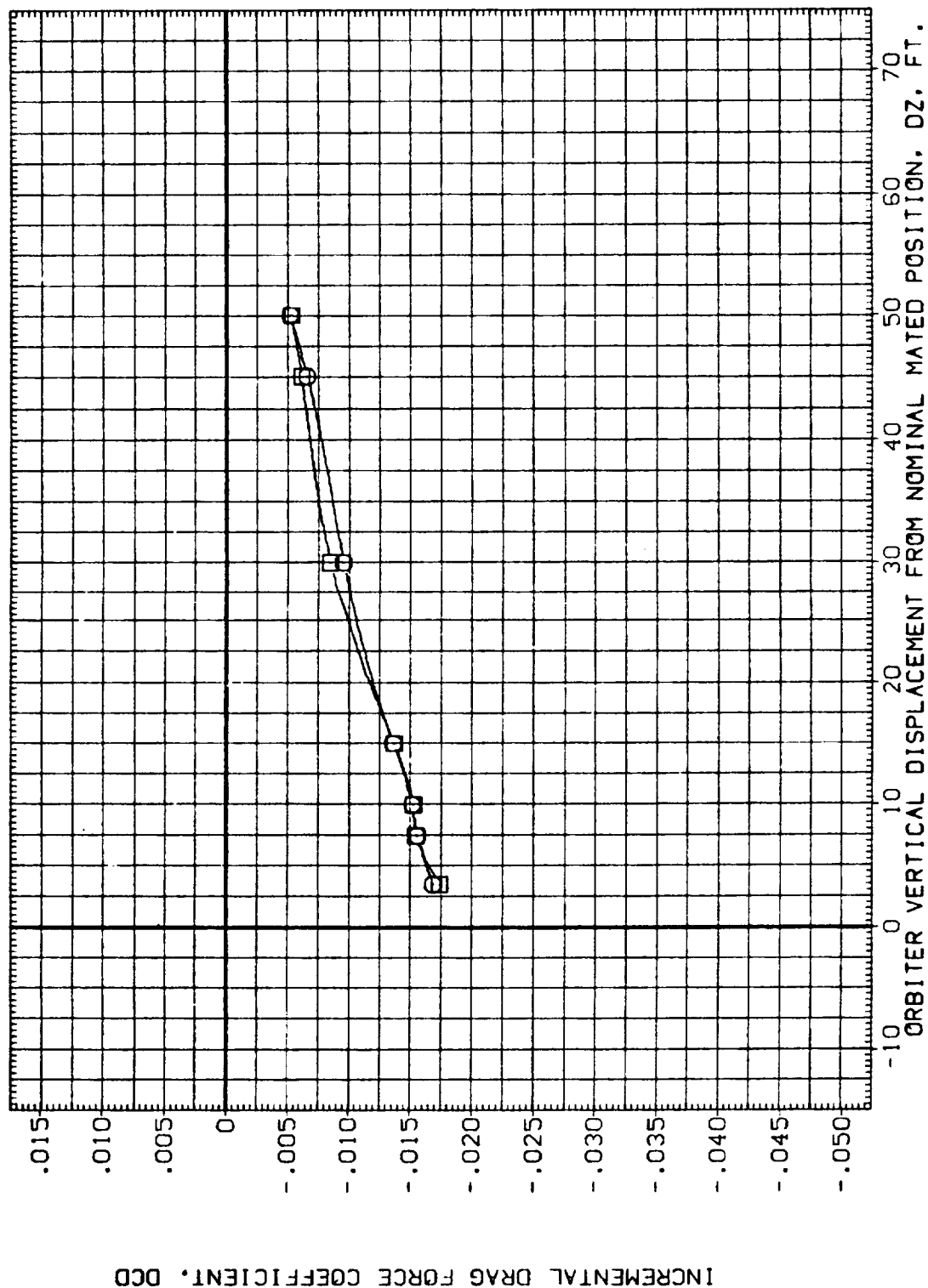


FIG. 59 ORBITER RUDDER EFFECTIVENESS ON ORBITER, T/C OFF, (IORB= 6.0 DEG.)

(B)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	ELEVON	IORB	MACH	REFERENCE INFORMATION
(DNH013)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	.000	5.000	6.000	.600	SREF 2690.0000 SQ.FT.
(4NH039)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	10.000	5.000	6.000	.600	LREF 474.8100 IN.
						BREF 936.6800 IN.
						XMRP 1109.0000 IN. XD
						YMRP .0000 IN. YD
						ZMRP 375.0000 IN. ZD
						SCALE .0125

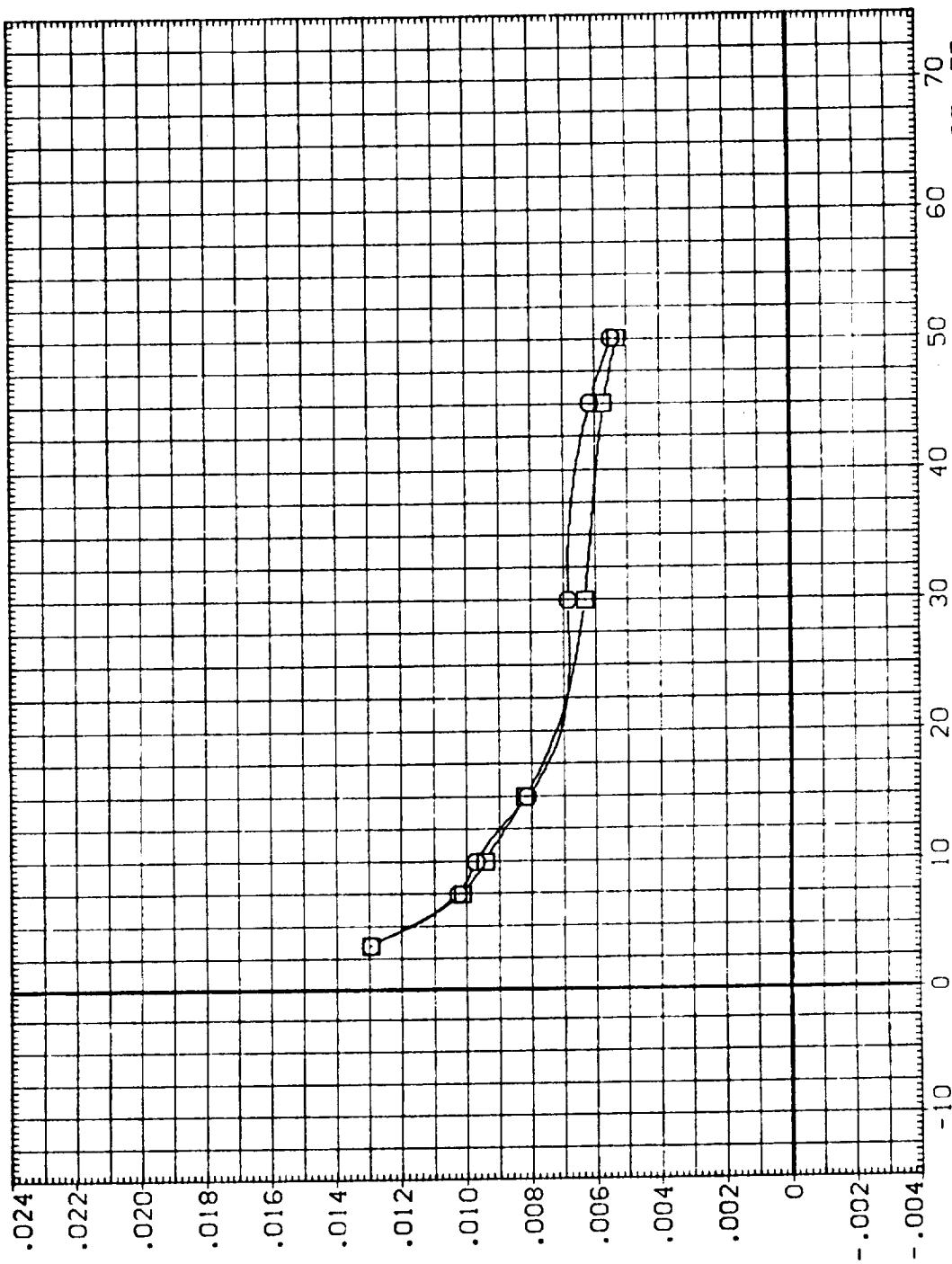


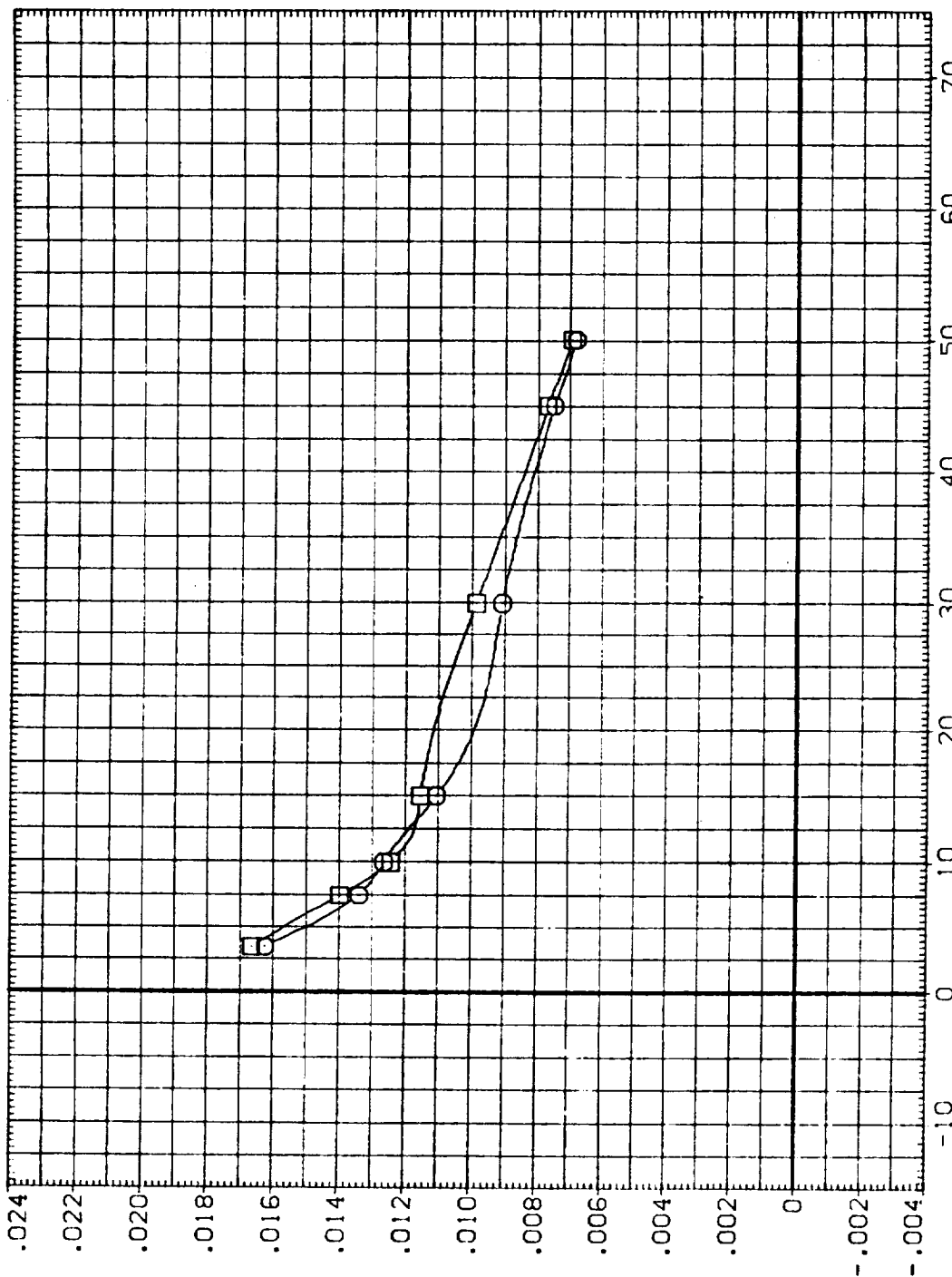
FIG. 59 ORBITER RUDDER EFFECTIVENESS ON ORBITER, T/C OFF, (IORB= 6.0 DEG.)

DATA SET SYMBOL (ONH013)  
(4NH039)

CONFIGURATION DESCRIPTION  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)  
ARC 14-120(CA238) 747/1 AT1 02S1 (ORBITER DATA)

RUDDER ELEVON 10RB MACH  
.000 5.000 .600  
10.000 5.000 .600

REFERENCE INFORMATION  
SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 936.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 59 ORBITER RUDDER EFFECTIVENESS ON ORBITER, T/C OFF, (10RB= 6.0 DEG.)

(B)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(PNH037)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF	5500.0000 SQ.FT.
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF	327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF	2348.0400 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP	1339.9000 IN. XC
						YMRP	190.7500 IN. YC
						ZMRP	SCALE .0125

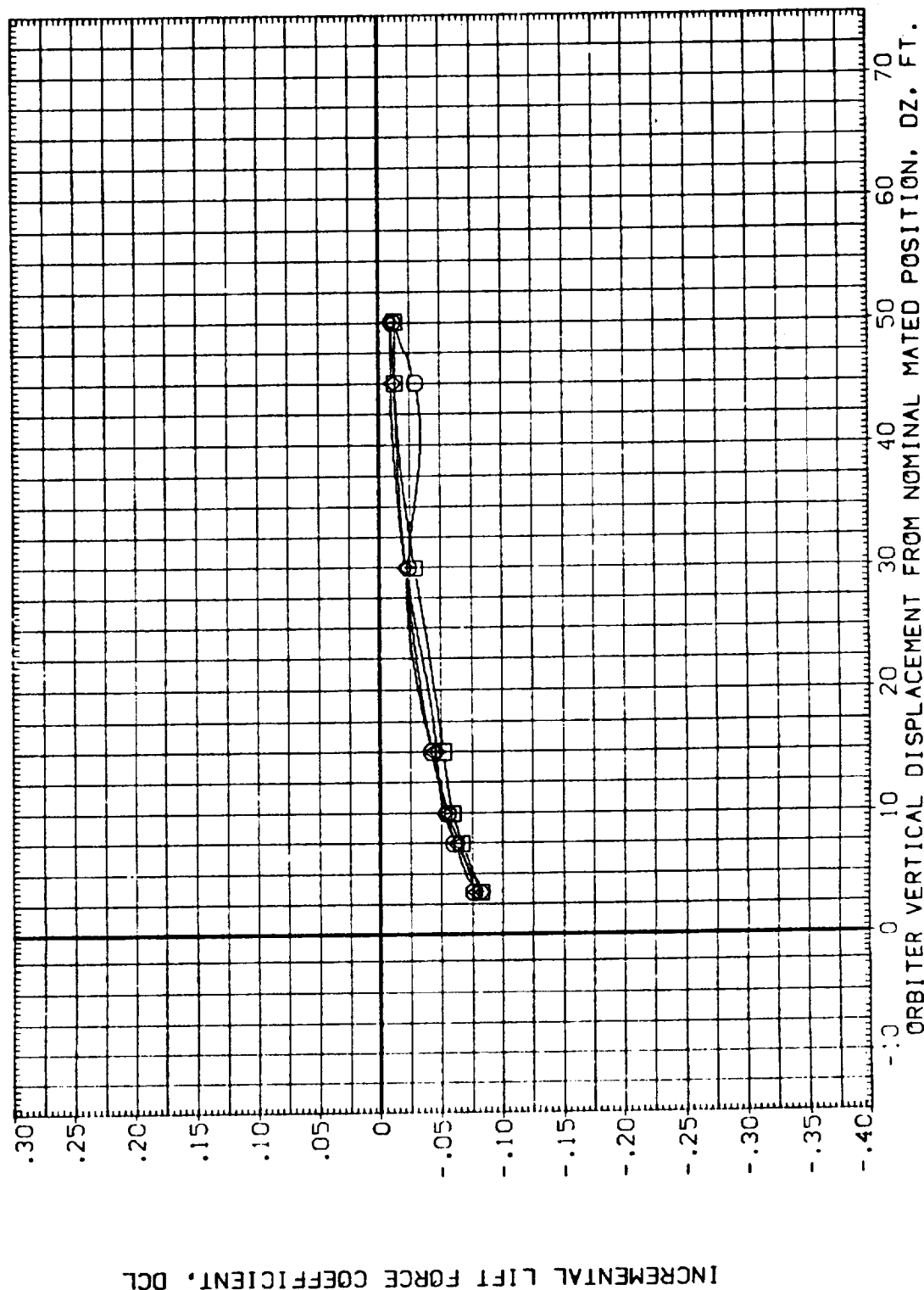


FIG. 60 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, CARRIER, (IORB= 6.0 DEG.)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH037)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1338.9000 IN. XC
						ZMRP .0000 IN. YC
						SCALE 190.7500 IN ZC

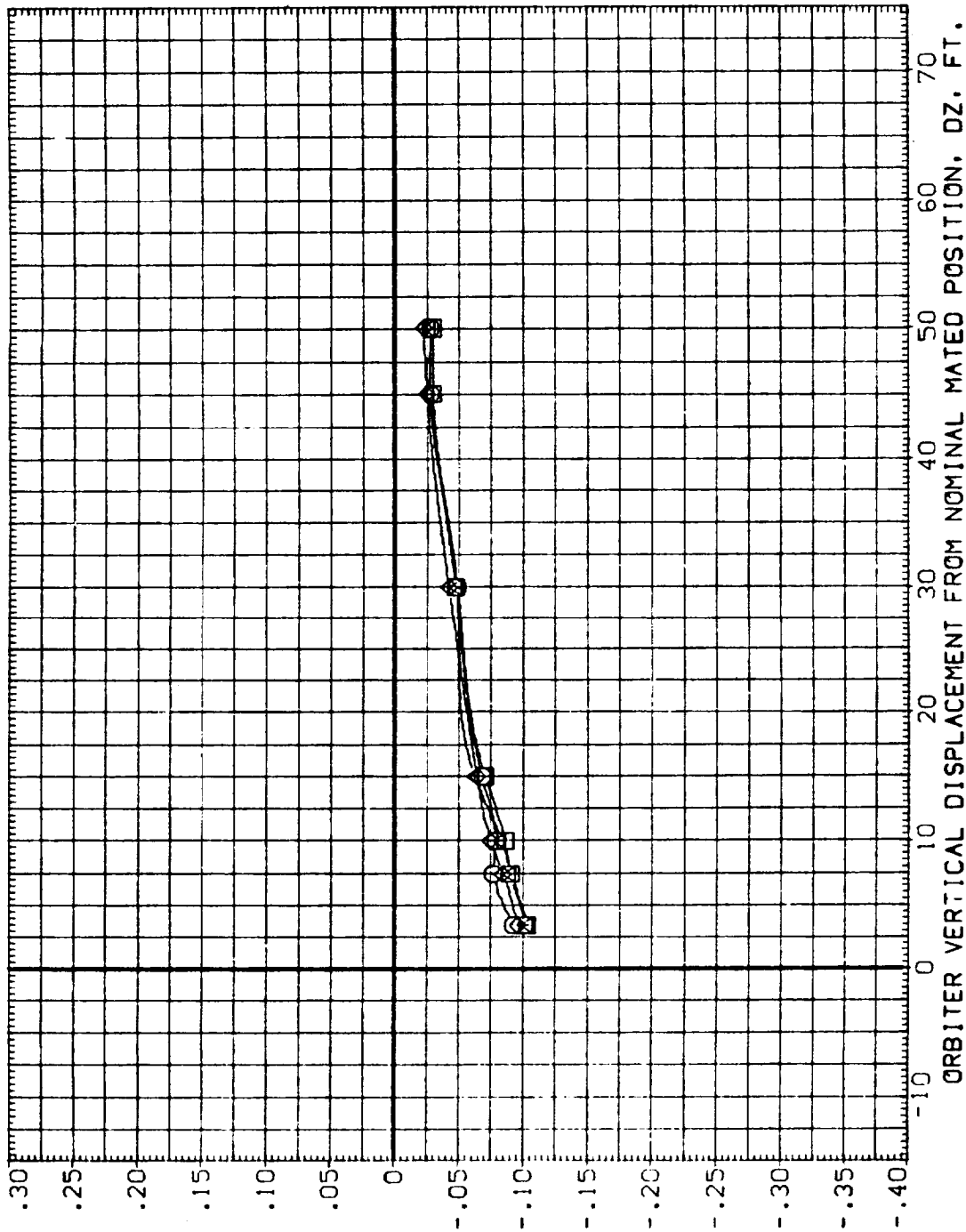


FIG. 60 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, CARRIER, (IORB= 6.0 DEG.)  
(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION		
(PNH037)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF	5500.0000	50. FT.
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	LREF	327.7800	IN.
(PNH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF	2348.0400	IN. XC
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	YMRP	1339.9000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0125	

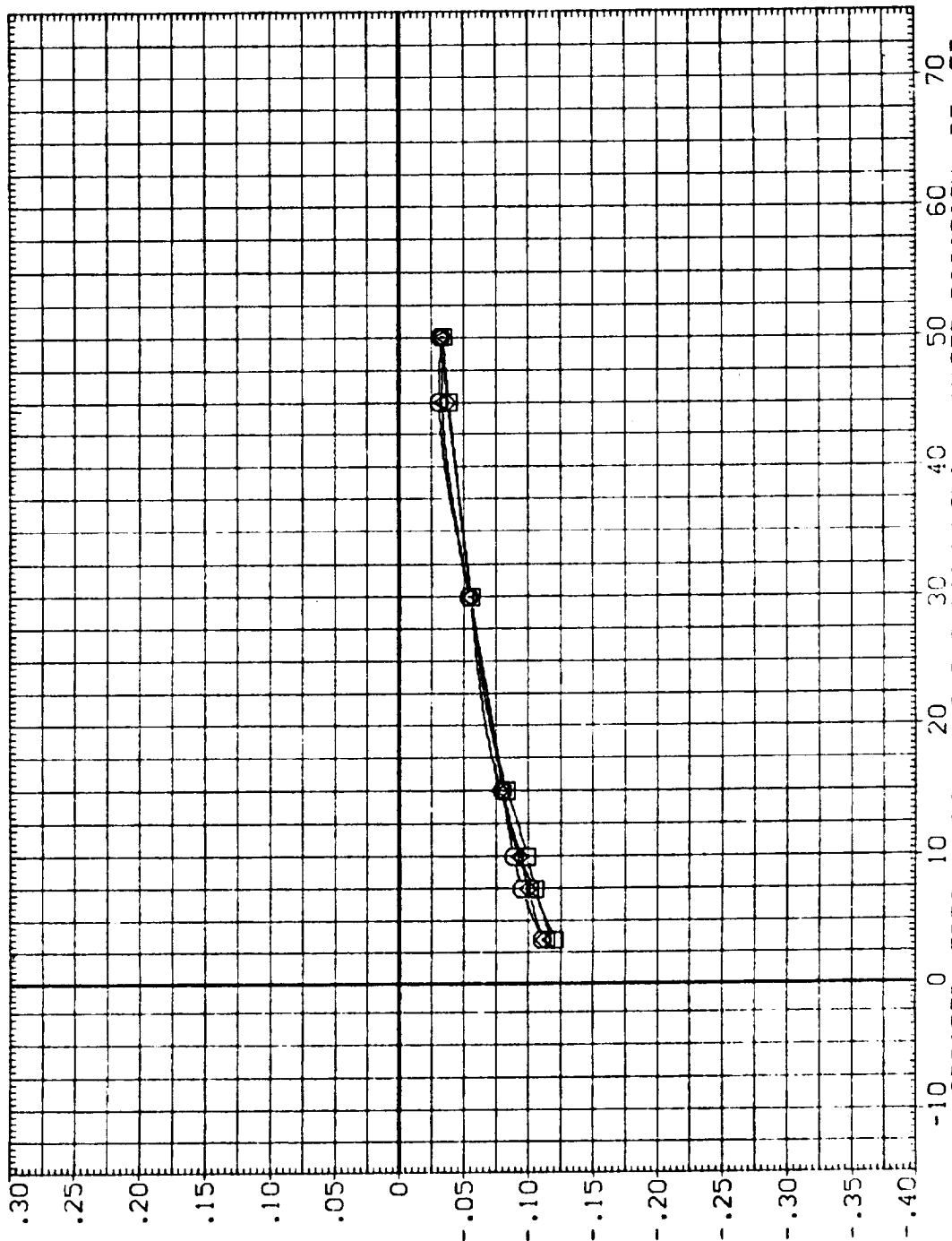
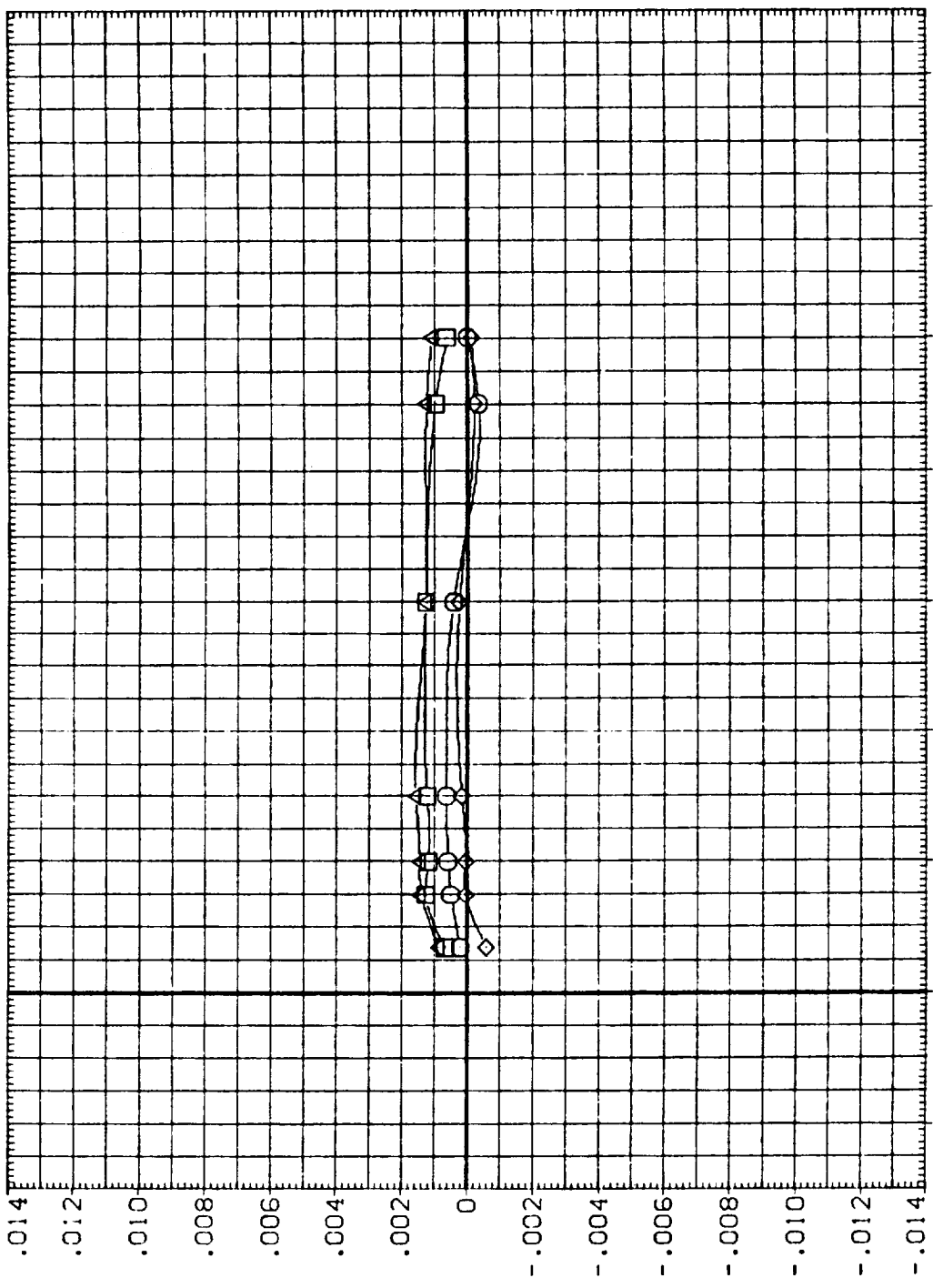


FIG. 60 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, CARRIER, (IORB= 6.0 DEG.)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ICRB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH037)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH034)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN. XC
(PNH023)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.9000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 60 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, CARRIER, (ICRB= 6.0 DEG.)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH037)	ARC (4-120(CA238) 747/1 AT1 03S) (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 SO.FT.
(PNH034)	ARC (4-120(CA238) 747/1 AT1 03S) (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800 IN.
(PNH034)	ARC (4-120(CA238) 747/1 AT1 02S) (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC (4-120(CA238) 747/1 AT1 02S) (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.9000 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0125

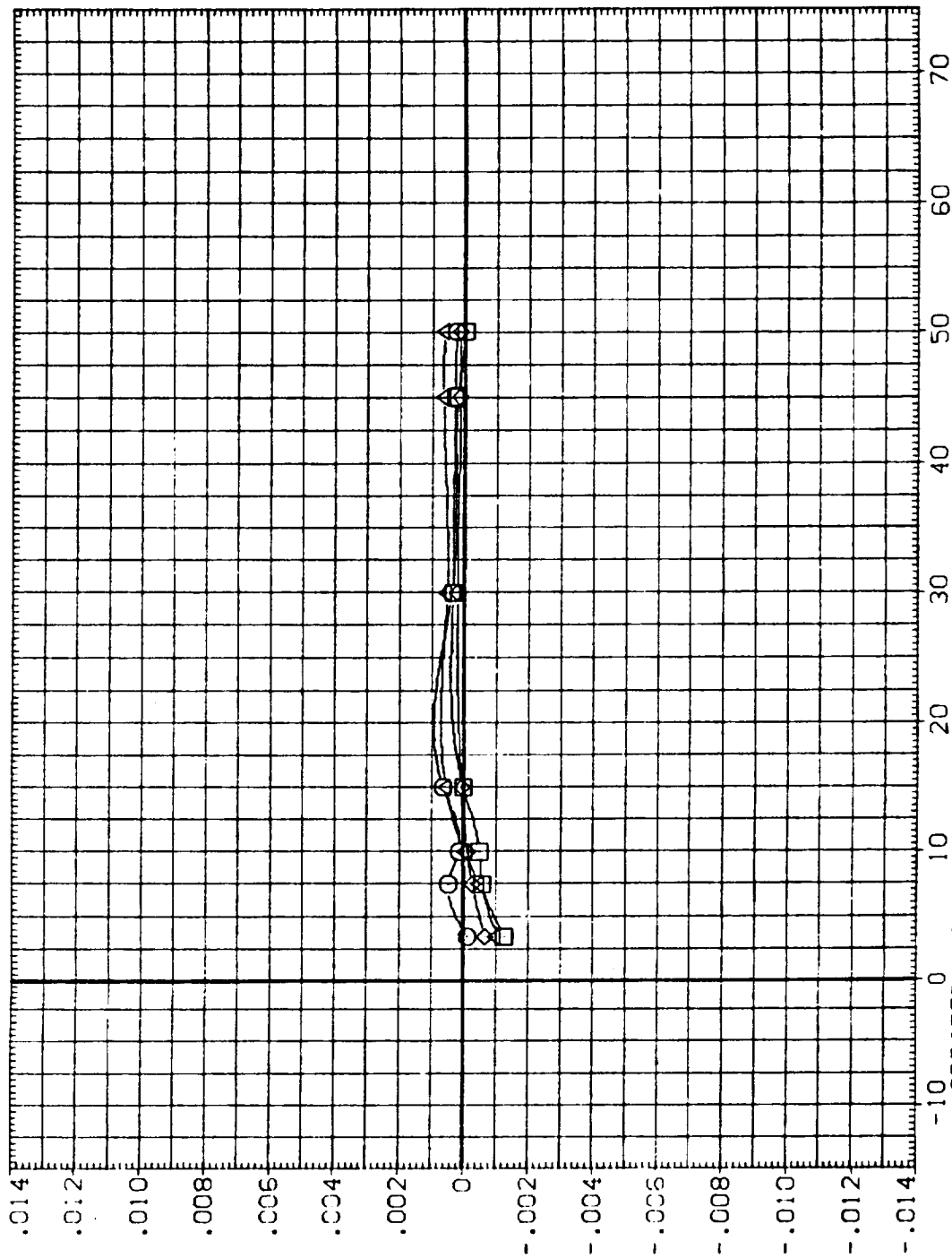


FIG. 60 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, CARRIER, (IORB= 6.0 DEG.)

(B)ALP=AC= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION ORB ELEVON MACH STAB REFERENCE INFORMATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH037)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.9000 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0125

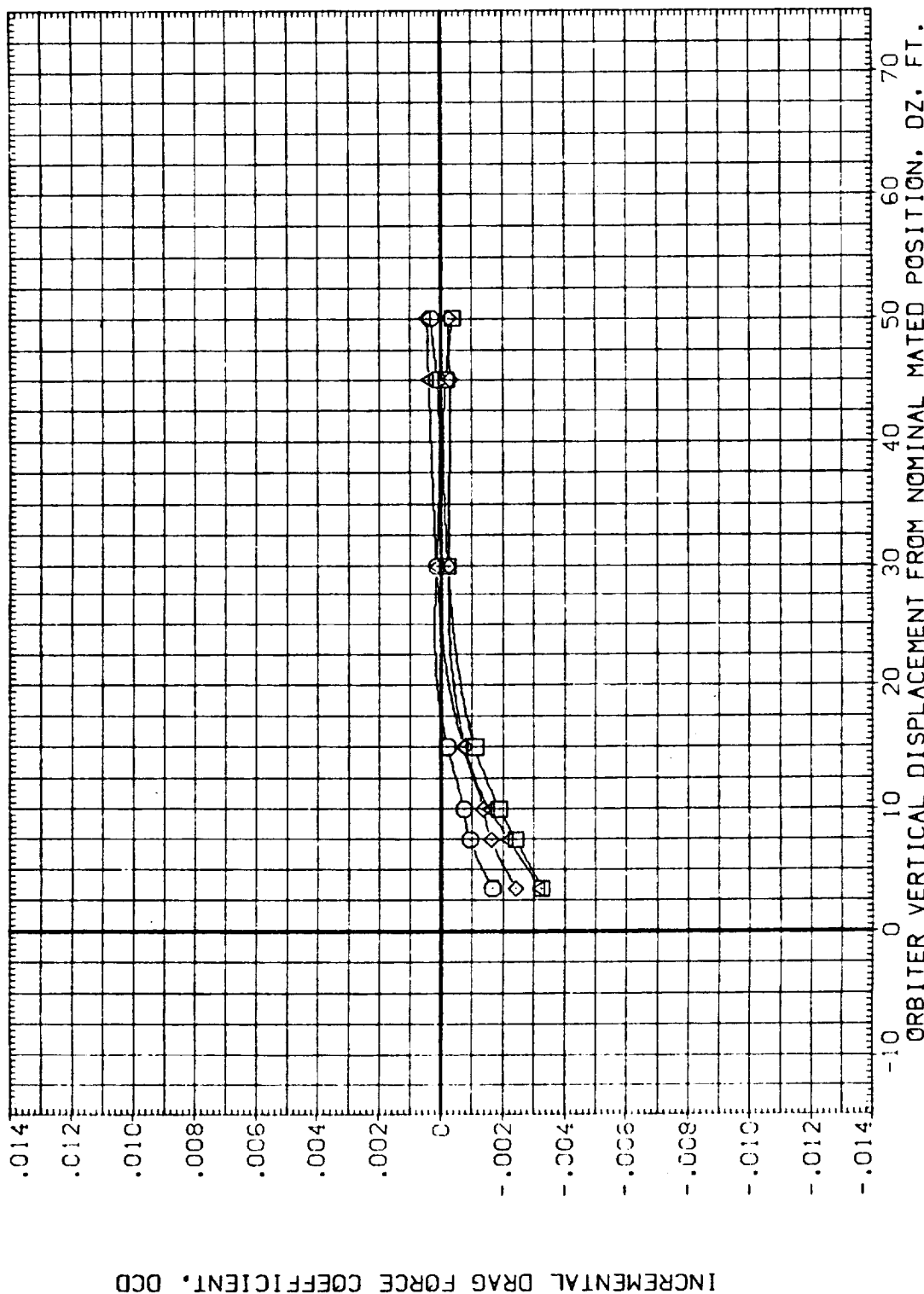


FIG. 60 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, CARRIER, (IORB= 6.0 DEG.)

(CJALPHAC= 4.00 PAGE 504

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH037)	ARC 14-120(CA238) 747/1 AT1 Q351 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 50. FT.
(PNH034)	ARC 14-120(CA238) 747/1 AT1 Q351 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800 IN.
(PNH024)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	6.000	.000	.600	5.000	YMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

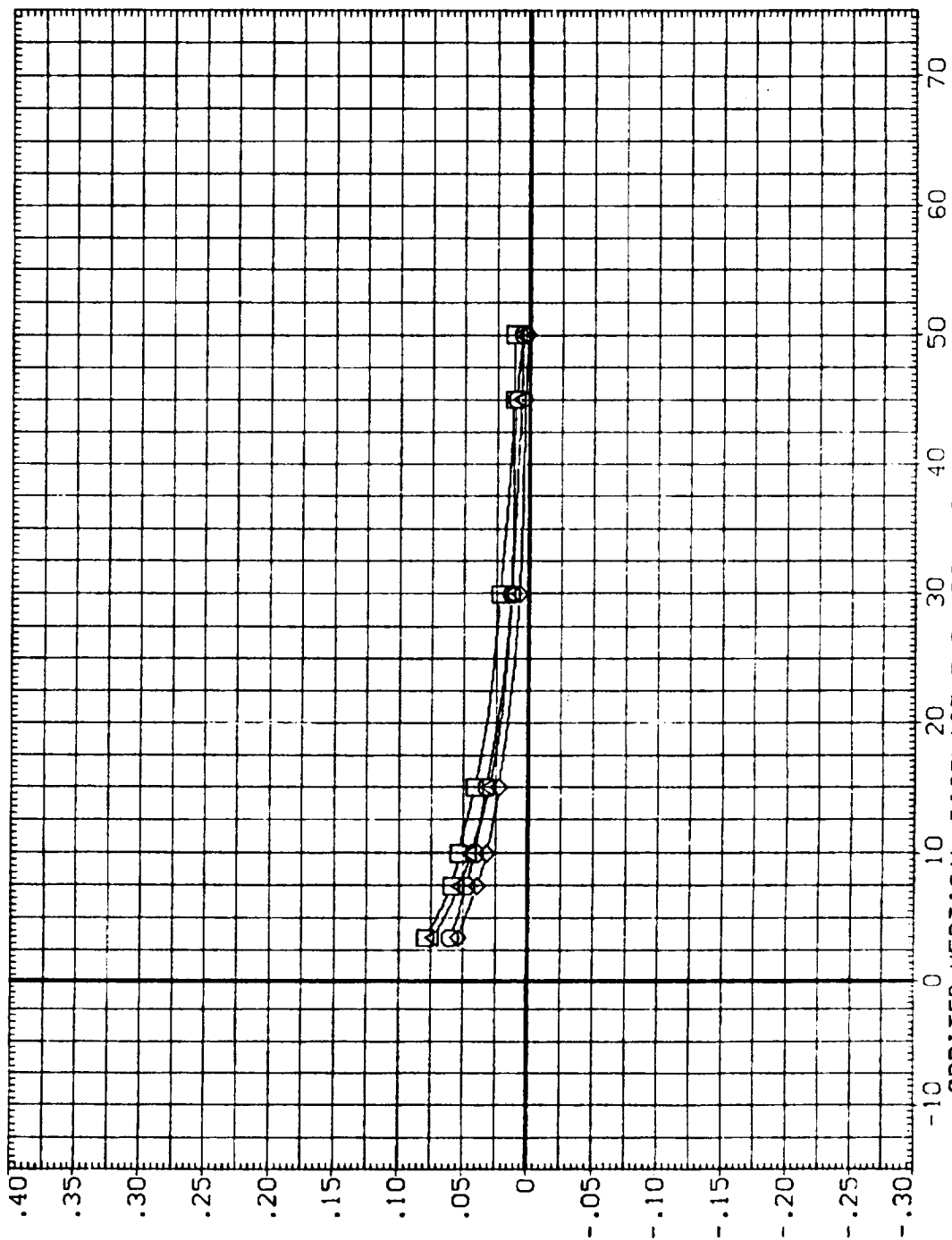


FIG. 60 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, CARRIER, (IORB= 6.0 DEG.)

(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH037)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH034)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH034)	ARC 14-120(CA238) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1338.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

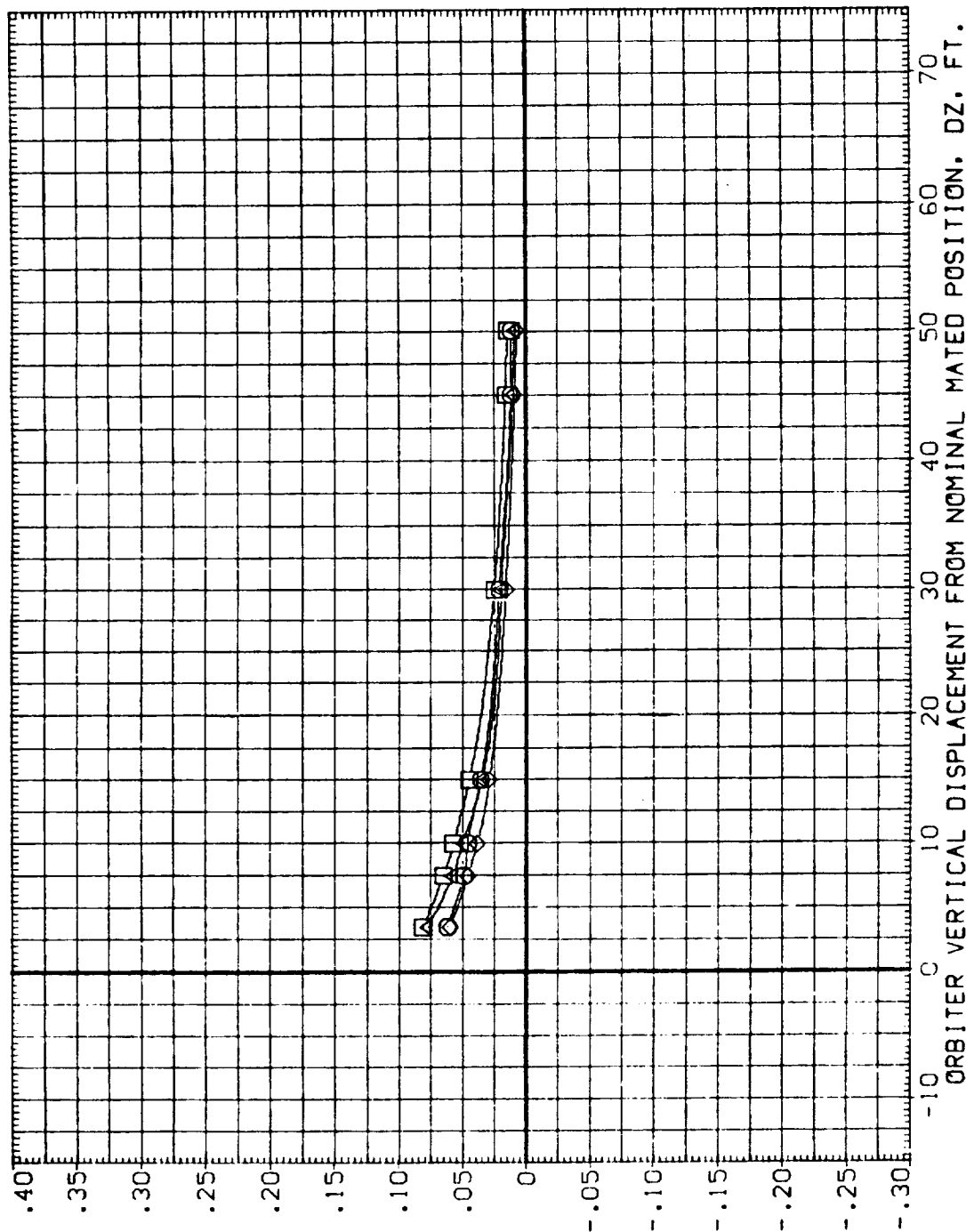
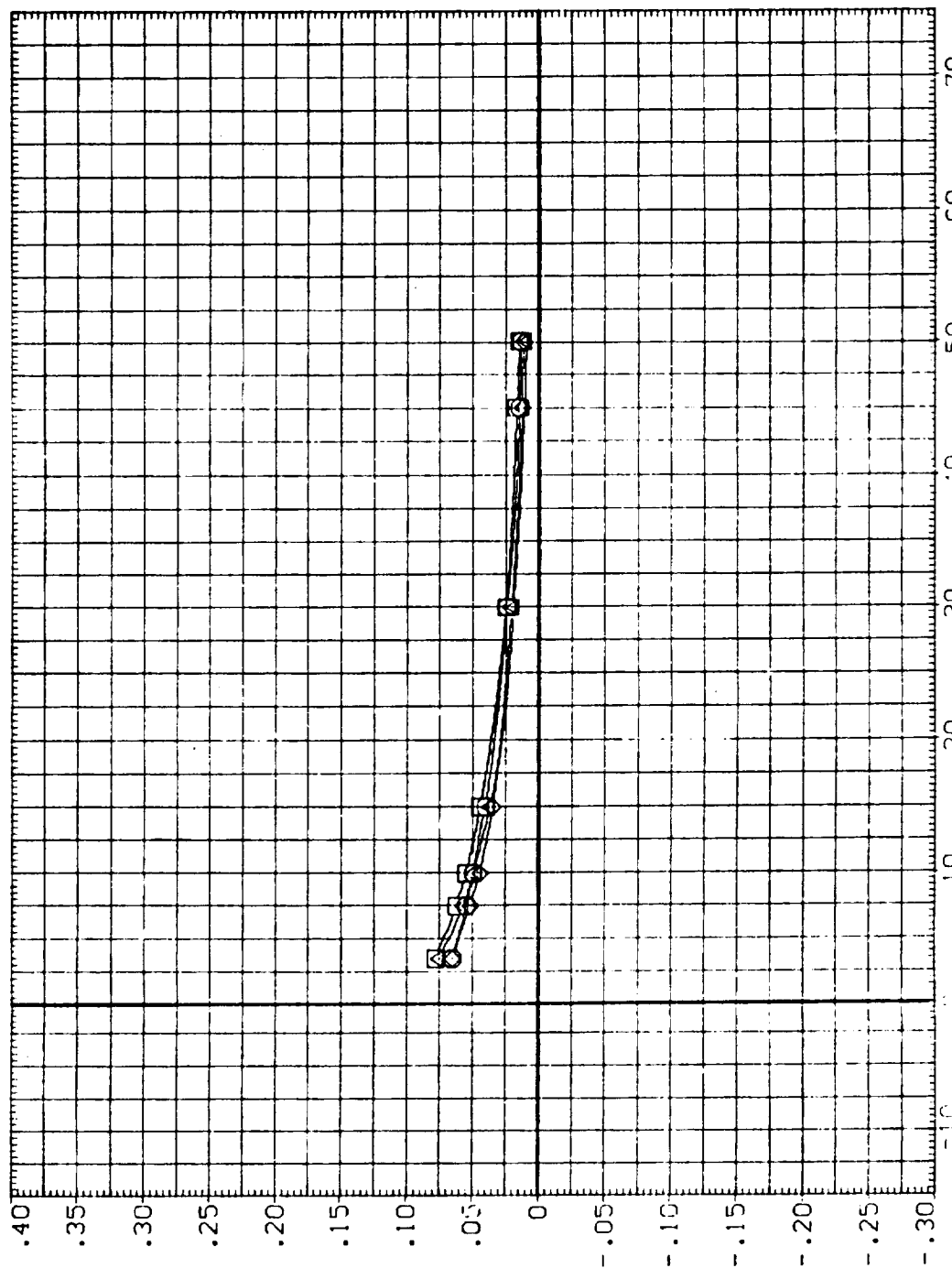


FIG. 60 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, CARRIER, (IORB= 6.0 DEG.)

(B)ALPHAC= 2.00

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH037)	□	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	-1.000	SREF 5500.0000 SQ.FT.
(PNH034)	□	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	-1.000	LREF 327.7800 IN.
(PNH024)	×	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	-1.000	BREF 2348.0400 IN.
(PNH023)	×	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	XMRP 1339.8000 IN. XC
							YMRP .0000 IN. YC
							ZMRP 190.7500 IN. ZC
							SCALE .0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 60 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, CARRIER, (IORB= 6.0 DEG.)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 50. FT.
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITTER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN. X0
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITTER DATA)	6.000	.000	.600	5.000	YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

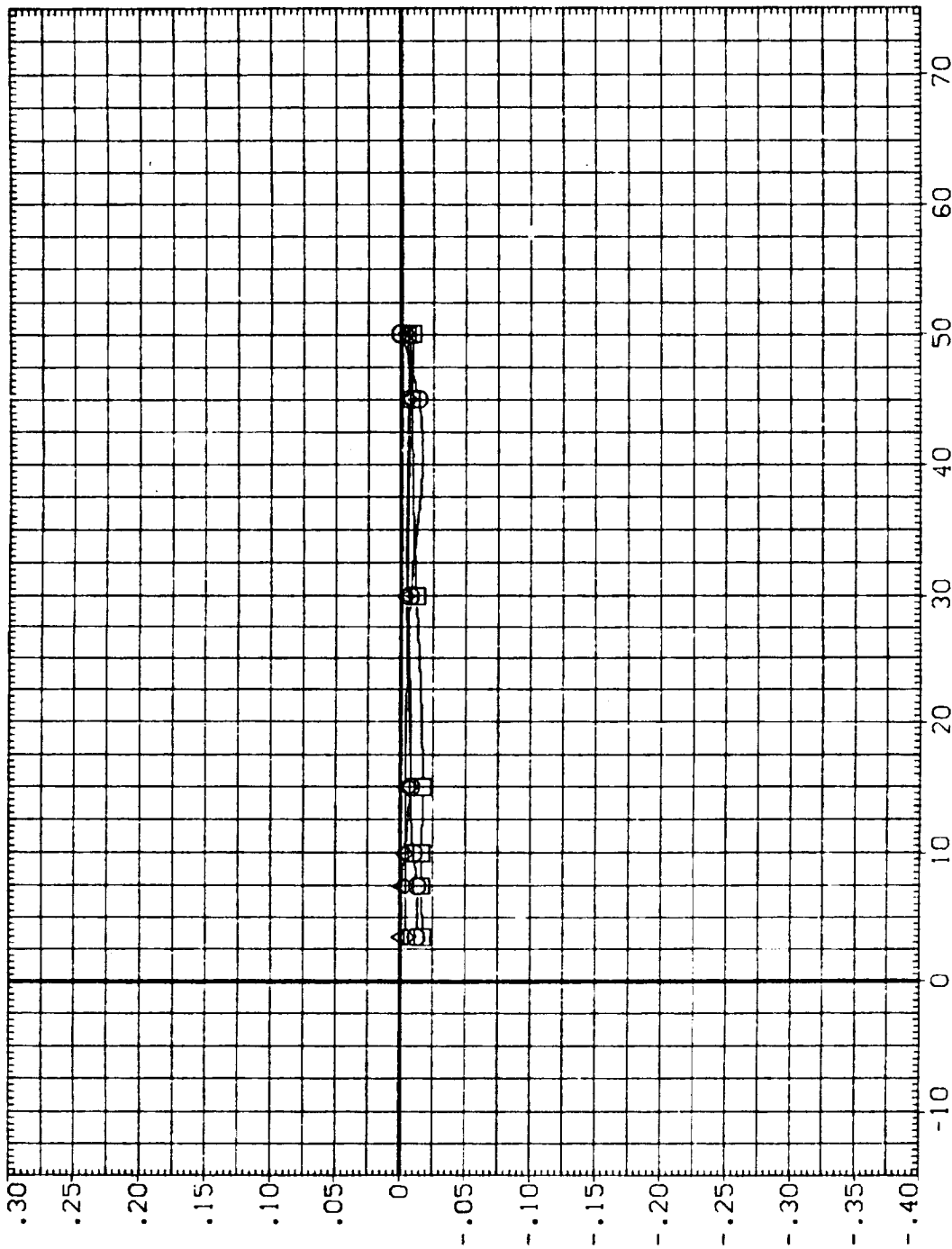


FIG. 61 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, ORBITTER, (IOB= 6.0 DEG.)

(A)ALPHAC= .00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORRB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	6.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	.000	.600	5.000	XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

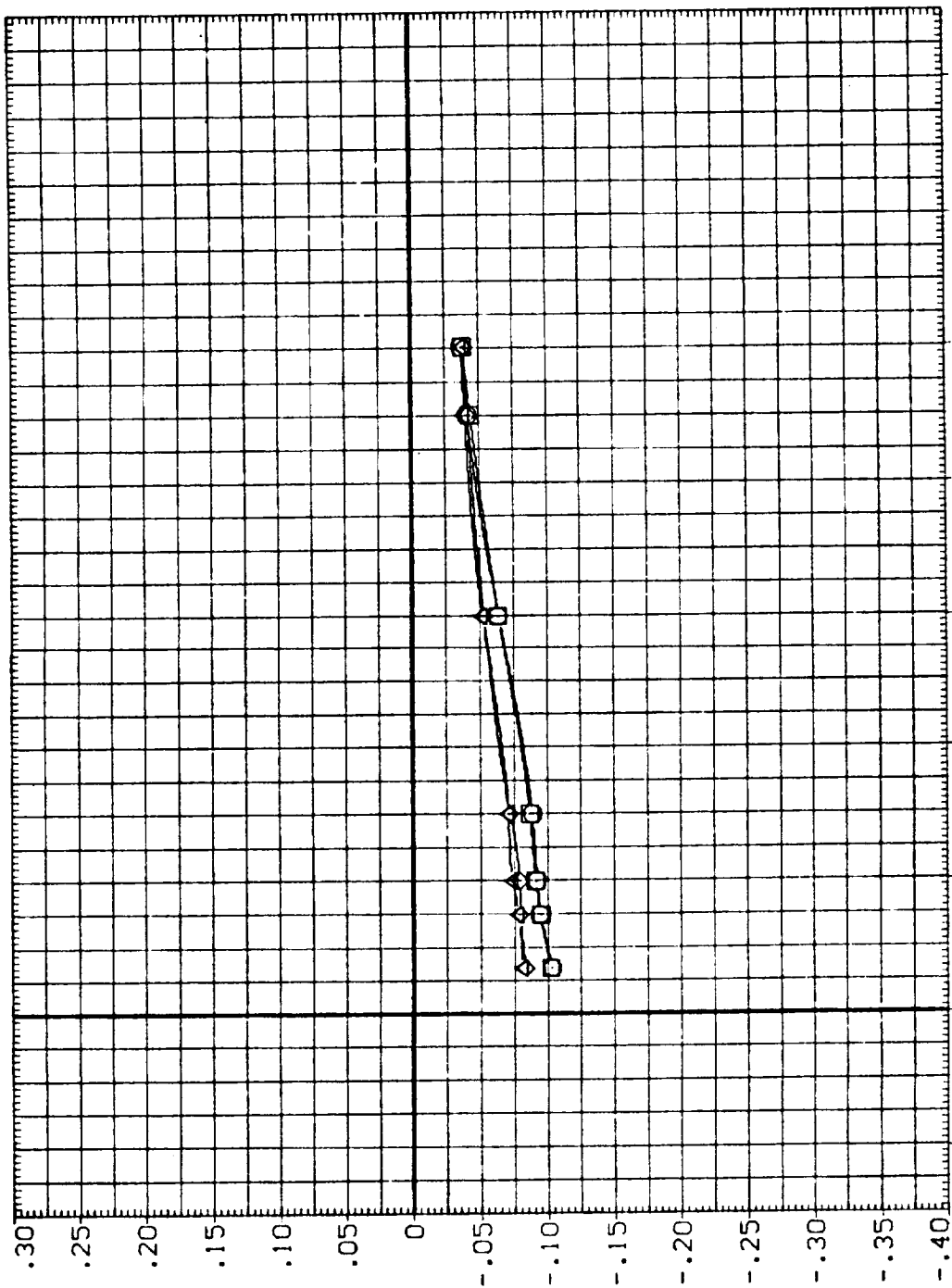
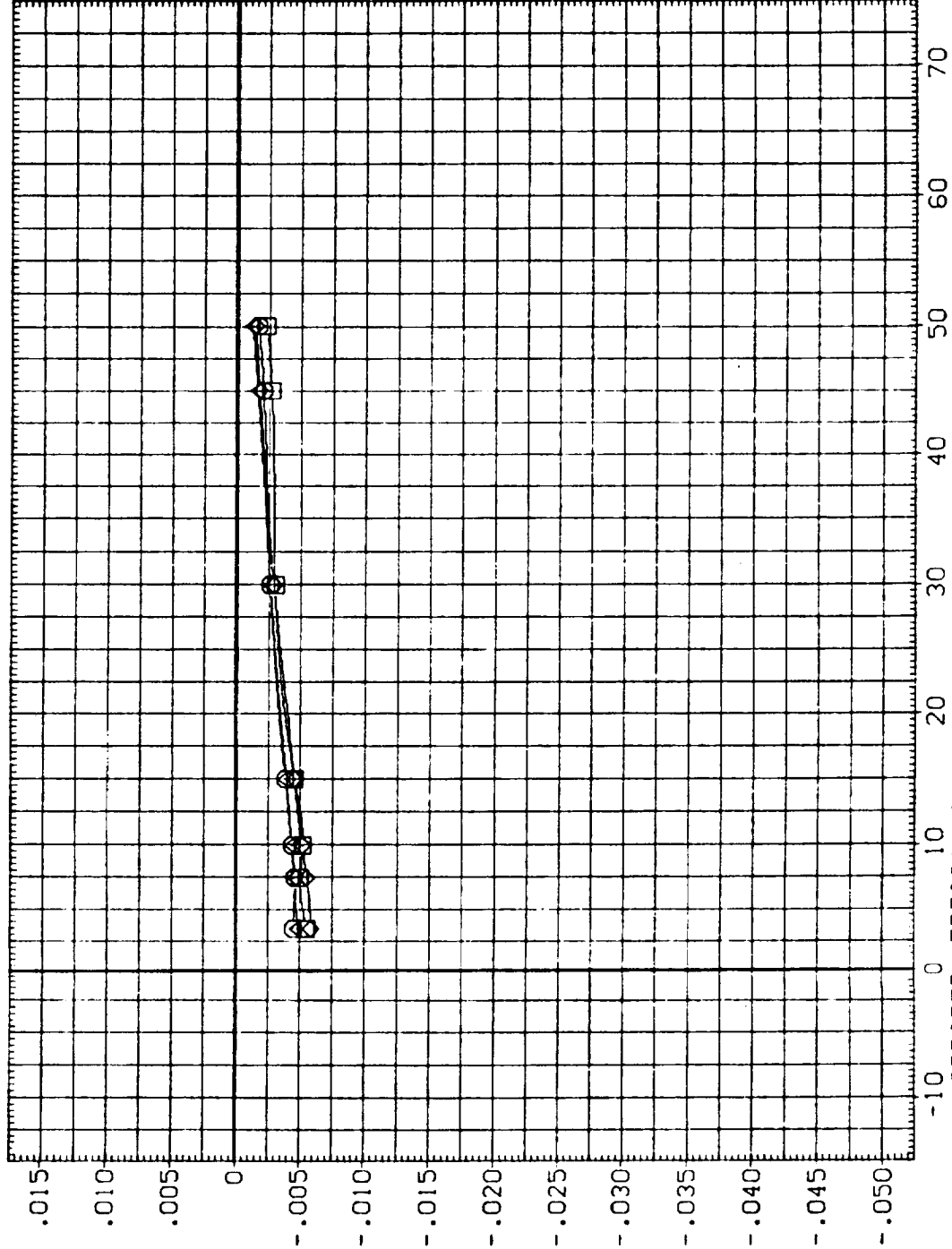


FIG. 61 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, ORBITER, (ORRB= 6.0 DEG.)

(C)ALPHAC= 4.00



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION	
(4NH037)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	-1.000	SREF	2690.0000 SQ.FT.
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	LREF	474.8100 IN.
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF	936.6800 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	XMRP	1109.0000 IN. X0
						YMRP	375.0000 IN. Y0
						ZMRP	375.0000 IN. Z0
						SCALE	.0125



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 61 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, ORBITER, (IORB= 6.0 DEG.)

(A)ALPHAC= .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	5.000	.000	.600	-1.000	SREF 2690.0000 50. FT.
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (ORBITER DATA)	5.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	5.000	.000	.600	-1.000	BREF 936.6800 IN. X0
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (ORBITER DATA)	5.000	.000	.600	5.000	XMRP 1109.0000 IN. Y0
						YMRP .0000 IN. Z0
						SCALE .0125

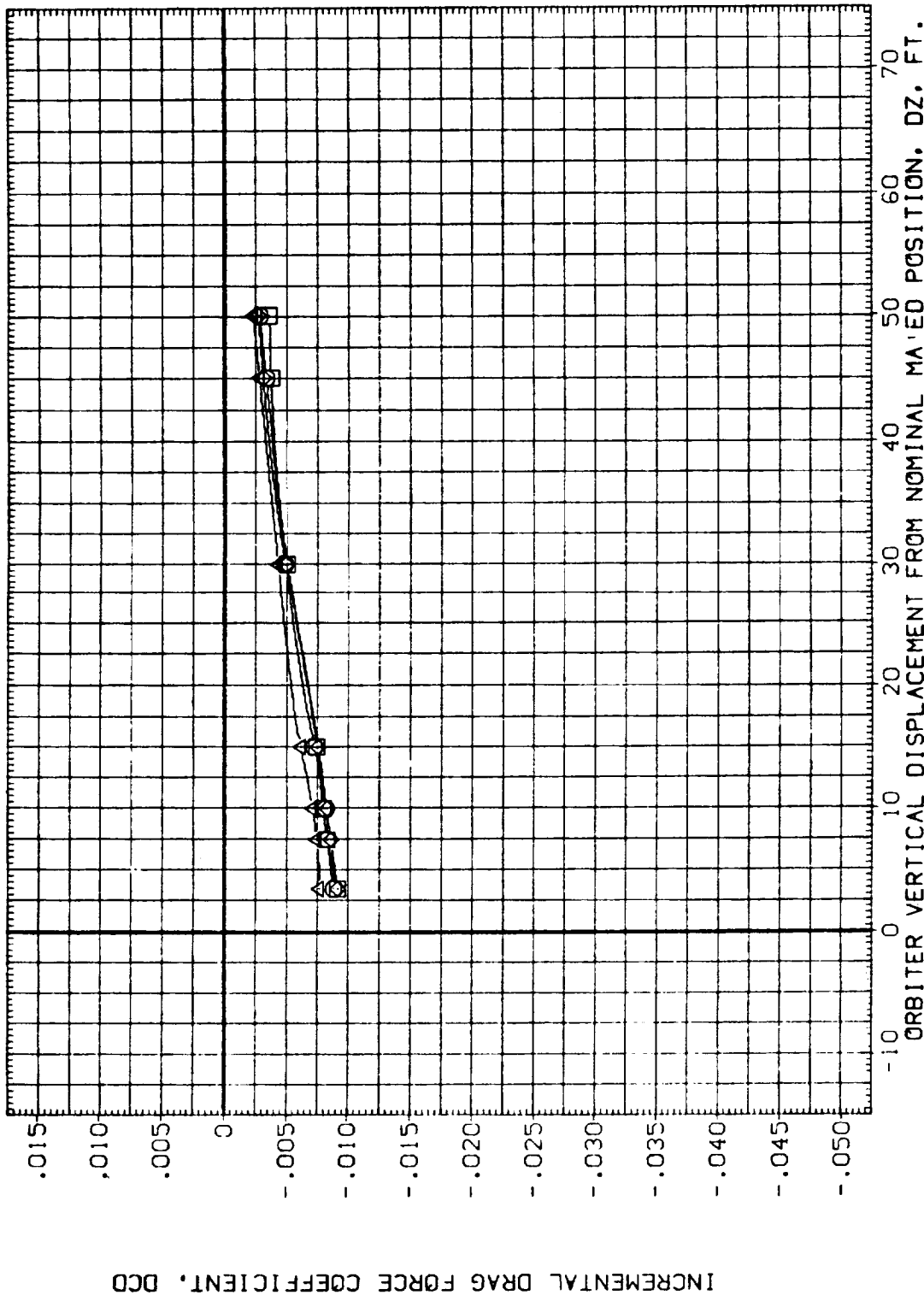


FIG. 61 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, ORBITER, (IORB= 6.0 DEG.)

(B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH037)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
(4NH034)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	-1.000	LREF 474.8100 IN.
(4NH024)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	-1.000	BREF 936.6800 IN.
(4NH023)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

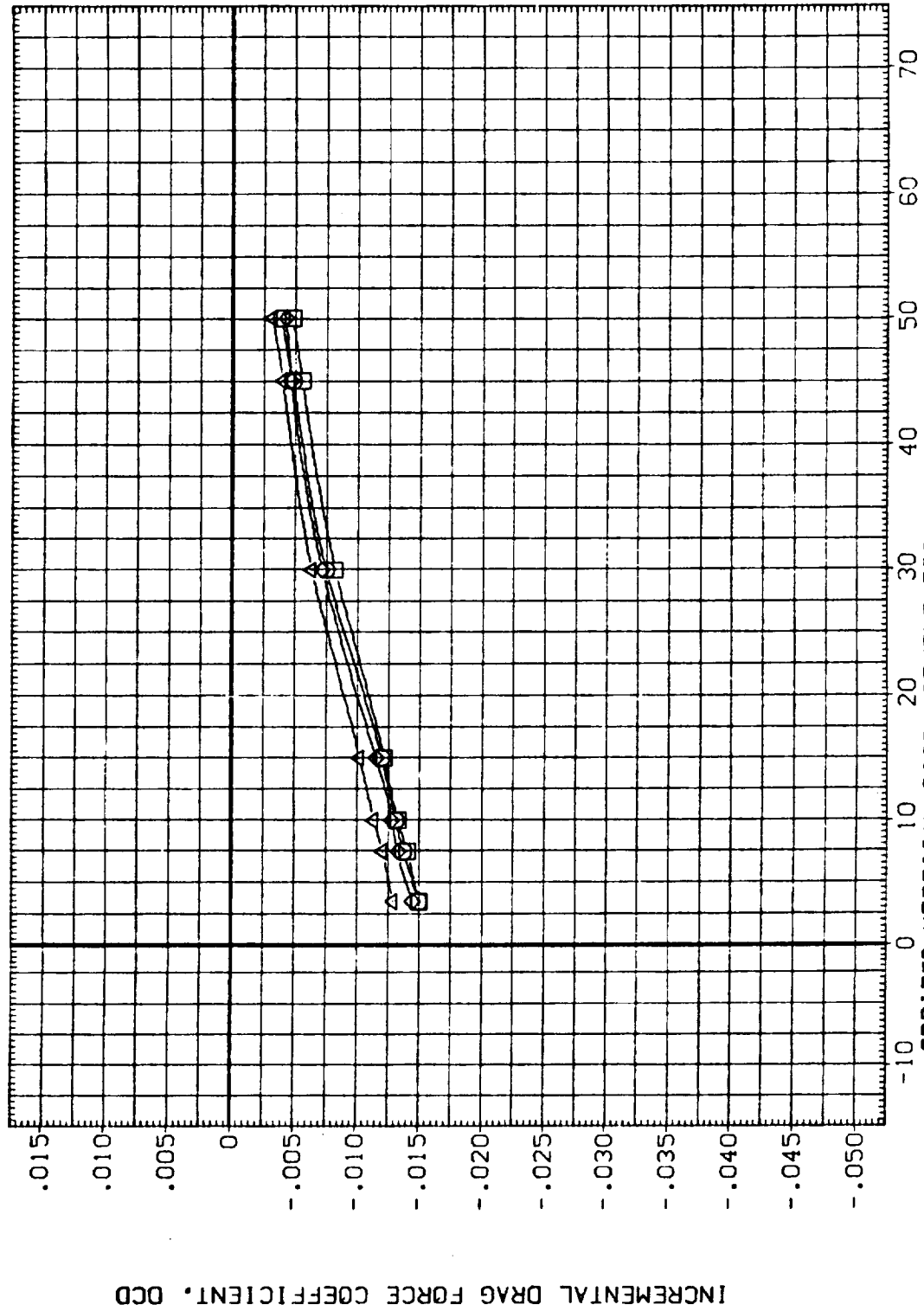
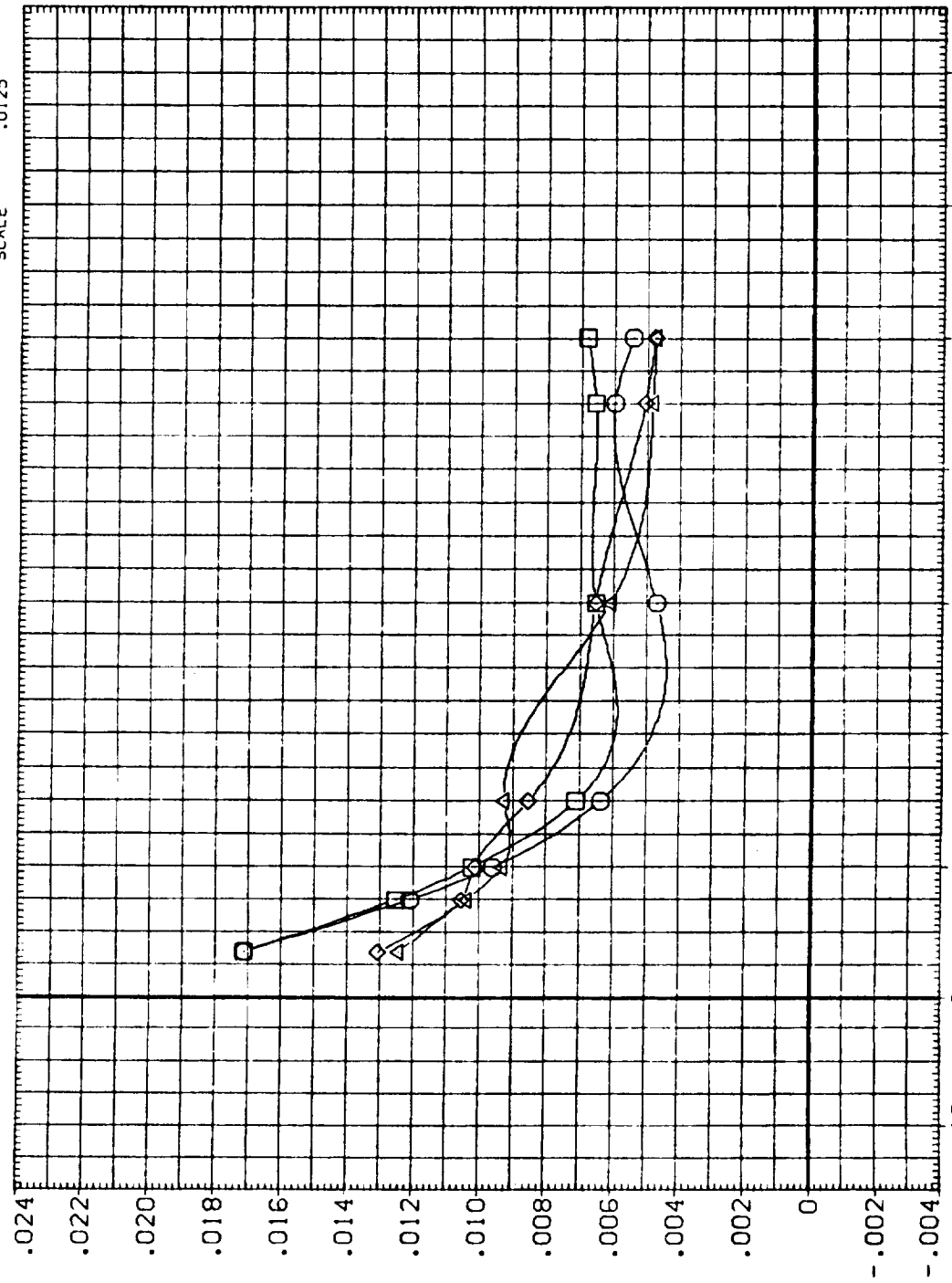


FIG. 61 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, ORBITER, (IORB= 6.0 DEG.)



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(4NH037)	□	ARC 14-120(CA23B) 747/1 A11 Q351 (ORBITER DATA)
(4NH034)	△	ARC 14-120(CA23B) 747/1 A11 Q351 (ORBITER DATA)
(4NH024)	×	ARC 14-120(CA23B) 747/1 A11 Q251 (ORBITER DATA)
(4NH023)	○	ARC 14-120(CA23B) 747/1 A11 Q251 (ORBITER DATA)

ICRB	ELEVON	HACH	STAB	REFERENCE INFORMATION
6.000	.000	.600	-1.000	SREF 2690.0000 SQ.FT.
6.000	.000	.600	5.000	LREF 474.8100 IN.
6.000	.000	.600	-1.000	BREF 936.6800 IN.
6.000	.000	.600	5.000	XMRP 1109.0000 IN. X0
				YMRP .0000 IN. Y0
				ZMRP 375.0000 IN. Z0
				SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 61 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, ORBITER, (ICRB= 6.0 DEG.)

(B)ALPHAC= 2.00

DATA SET SYMBOL      CONFIGURATION DESCRIPTION      ORB      ELEVON      MACH      STAB      REFERENCE INFORMATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	SREF	LREF	BREF	XMRP	YMRP	ZMRP	SCALE
(4NH037)	ARC 14-120(CA23B) 747/1 AT1 Q351 (ORBITER DATA)	6.000	.000	.600	-1.000	2690.0000	474.8100	936.6800	1109.0000	.0000	375.0000	.0125
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 Q351 (ORBITER DATA)	6.000	.000	.600	-1.000	2690.0000	474.8100	936.6800	1109.0000	.0000	375.0000	.0125
(4NH024)	ARC 14-120(CA23B) 747/1 AT1 Q251 (ORBITER DATA)	6.000	.000	.600	-1.000	2690.0000	474.8100	936.6800	1109.0000	.0000	375.0000	.0125
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 Q251 (ORBITER DATA)	6.000	.000	.600	-1.000	2690.0000	474.8100	936.6800	1109.0000	.0000	375.0000	.0125

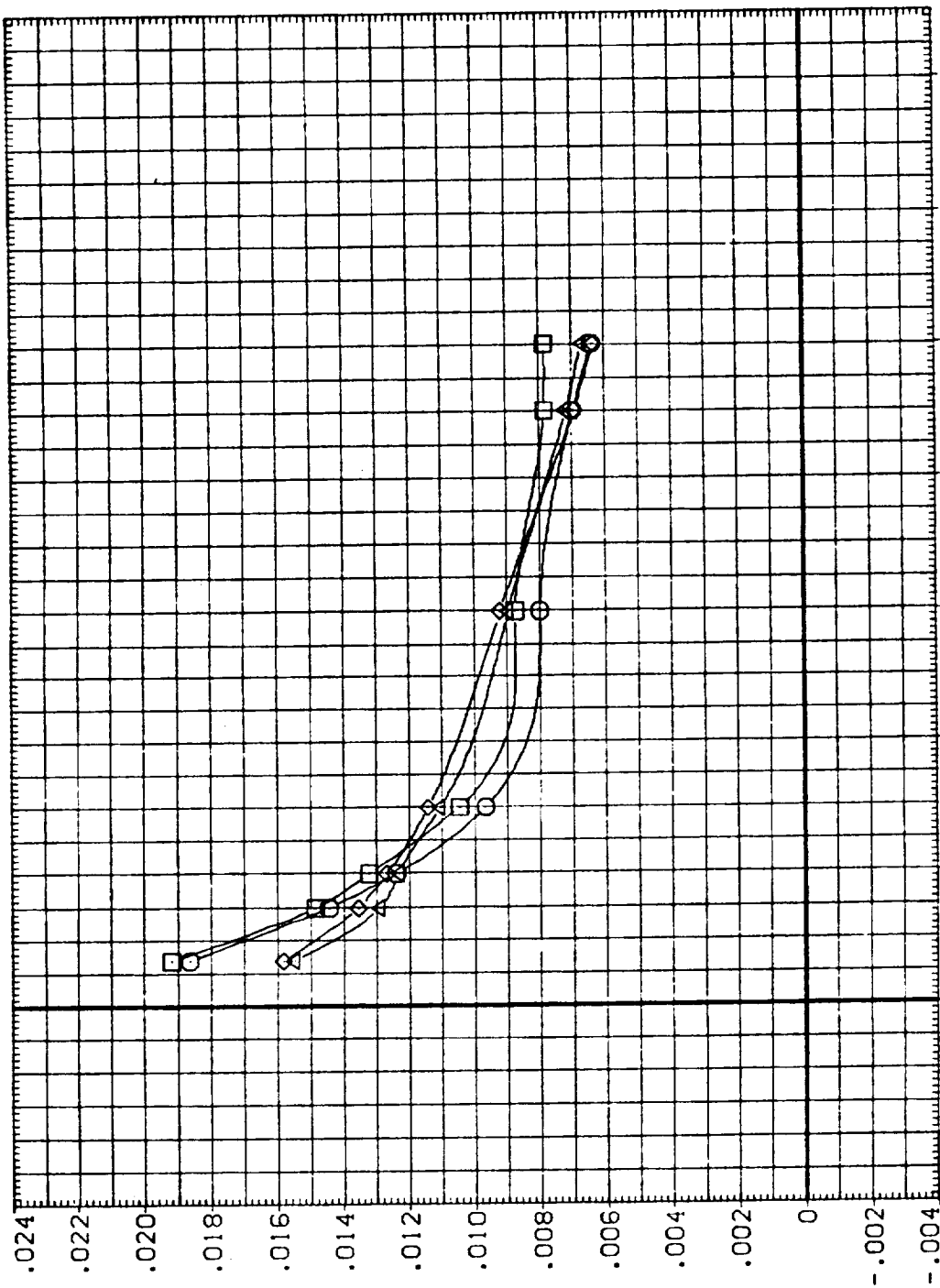


FIG. 61 EFFECT OF ORB TAILCONE ON CARRIER STAB POWER, ORBITER, (IORB= 6.0 DEG.)

(C)ALPHAC= 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH038)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN. YC
						ZMRP .0000 IN. ZC
						SCALE .0125

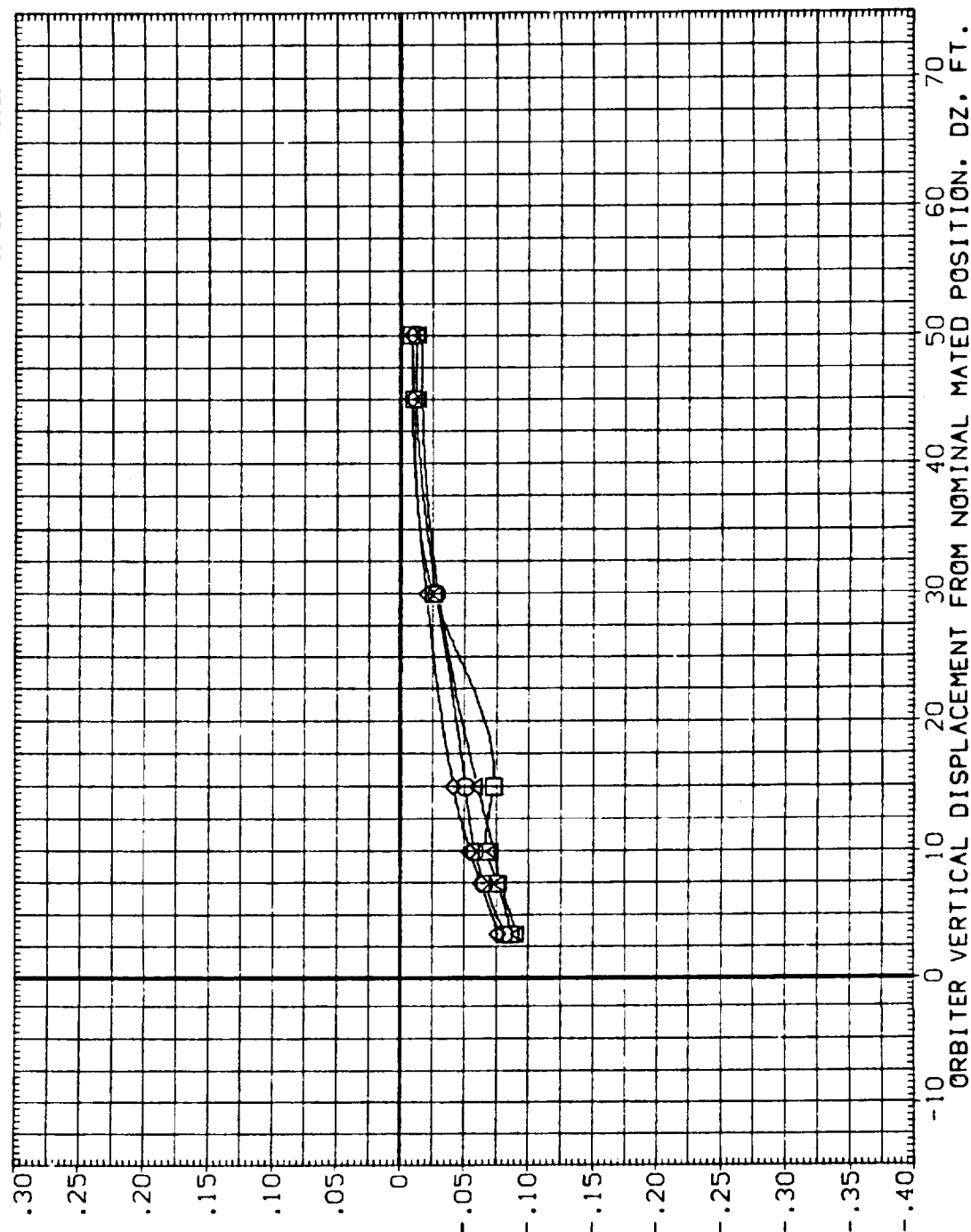
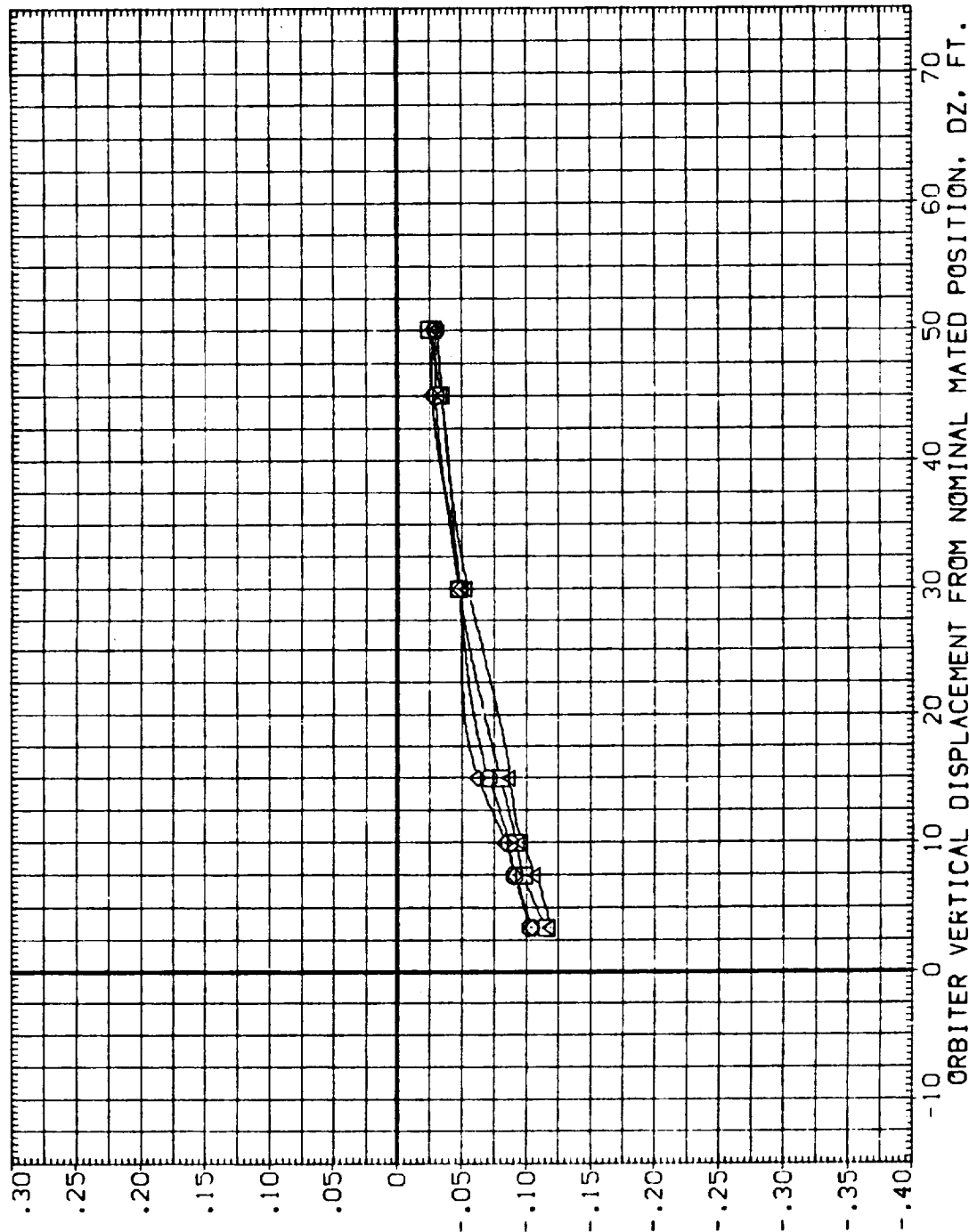


FIG. 62 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, CARRIER, (IORB= 6.0 DEG.)  
 (A)ALPHAC= .00

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INRB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH038)	ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 337.7800 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2346.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 Q351 (CARRIER DATA)	6.000	5.000	.600	5.000	YMRP 1339.9000 IN.
						ZMRP .0000 IN.
						SCALE 190.7500 IN
						SCALE .0125 IN



ORBITER VERTICAL DISPLACEMENT FROM NOMINAL MATED POSITION, DZ, FT.

FIG. 62 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, CARRIER, (IORB= 6.0 DEG.)

(B)ALPHAC= 2.00 PAGE 518



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH038)	ARC 14-120(CA238) 747/1 AT1 03S1 (CARRIER DATA)	6.000	5.000	.600	5.000	UREF 327.7800 IN.
(PNH023)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA238) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

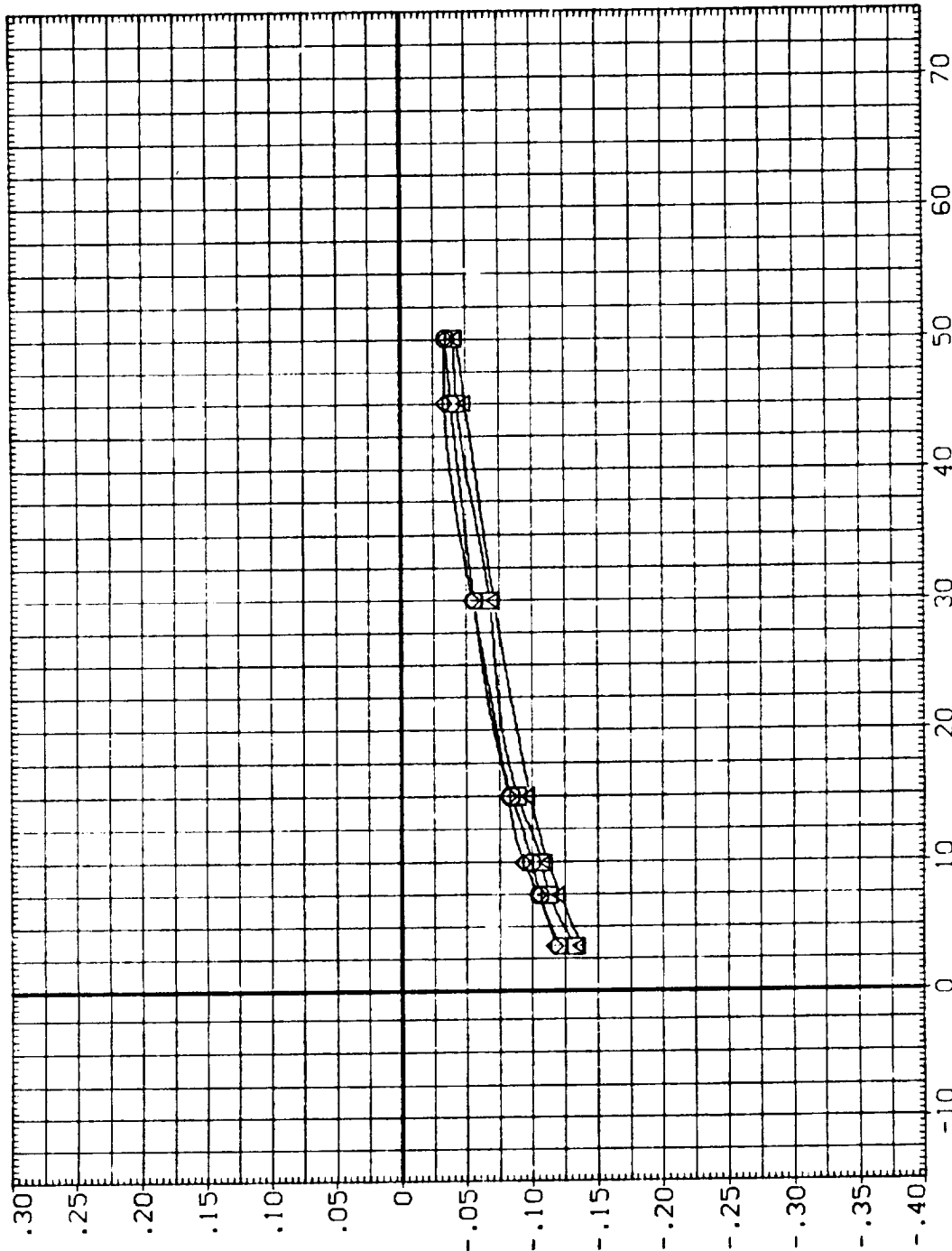


FIG. 62 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, CARRIER, (IORB= 6.0 DEG.)

INCREMENTAL DRAG FORCE COEFFICIENT, DCD

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SO.FT.
(PNH038)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2346.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0125

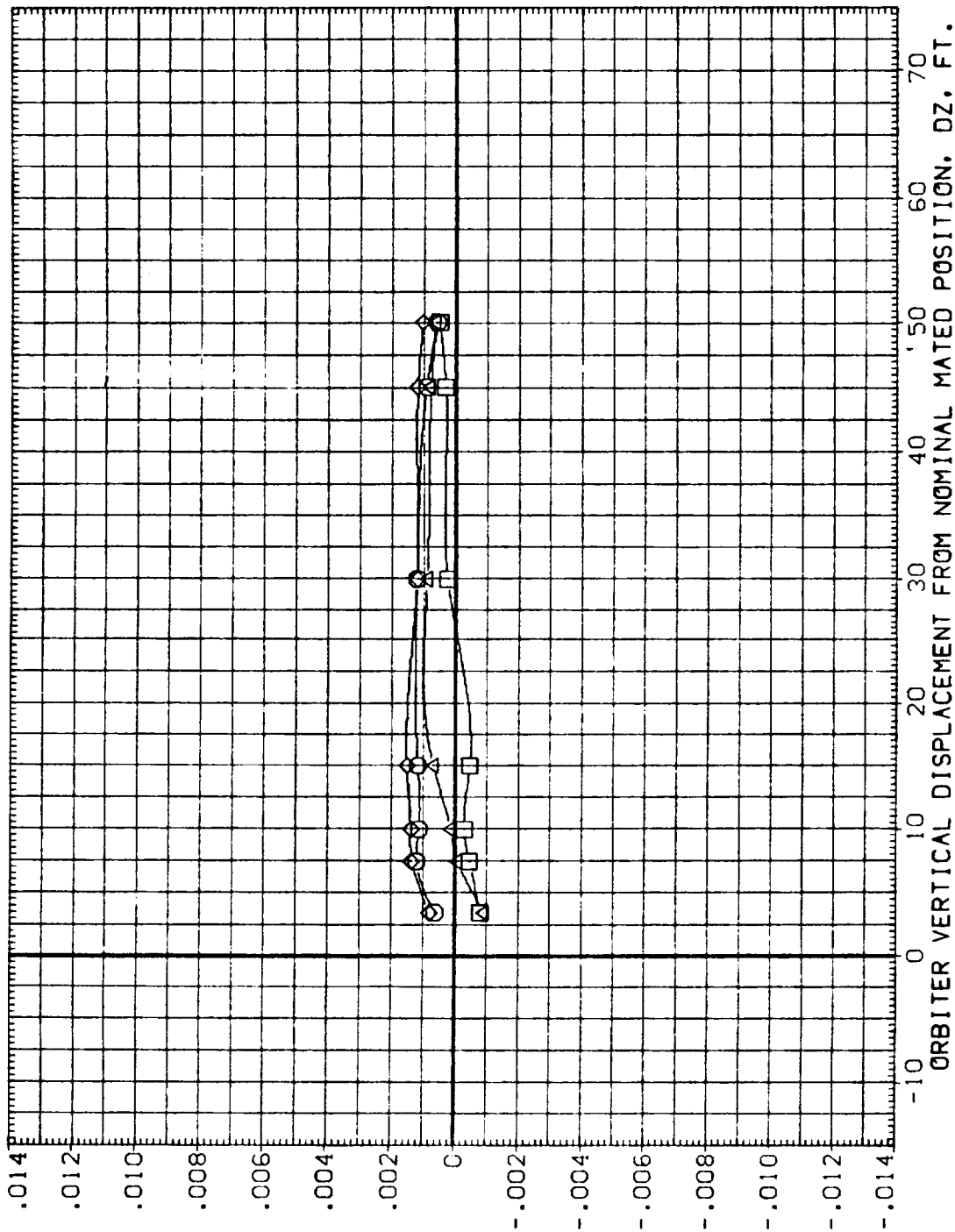


FIG. 62 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, CARRIER, (IORB= 6.0 DEG.)

(A)ALPHAC= .00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA238) 747/1 AT: 0351 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SO.FT.
(PNH038)	ARC 14-120(CA238) 747/1 AT: 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA238) 747/1 AT: 0351 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA238) 747/1 AT: 0251 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.5000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN ZC
						SCALE .0125

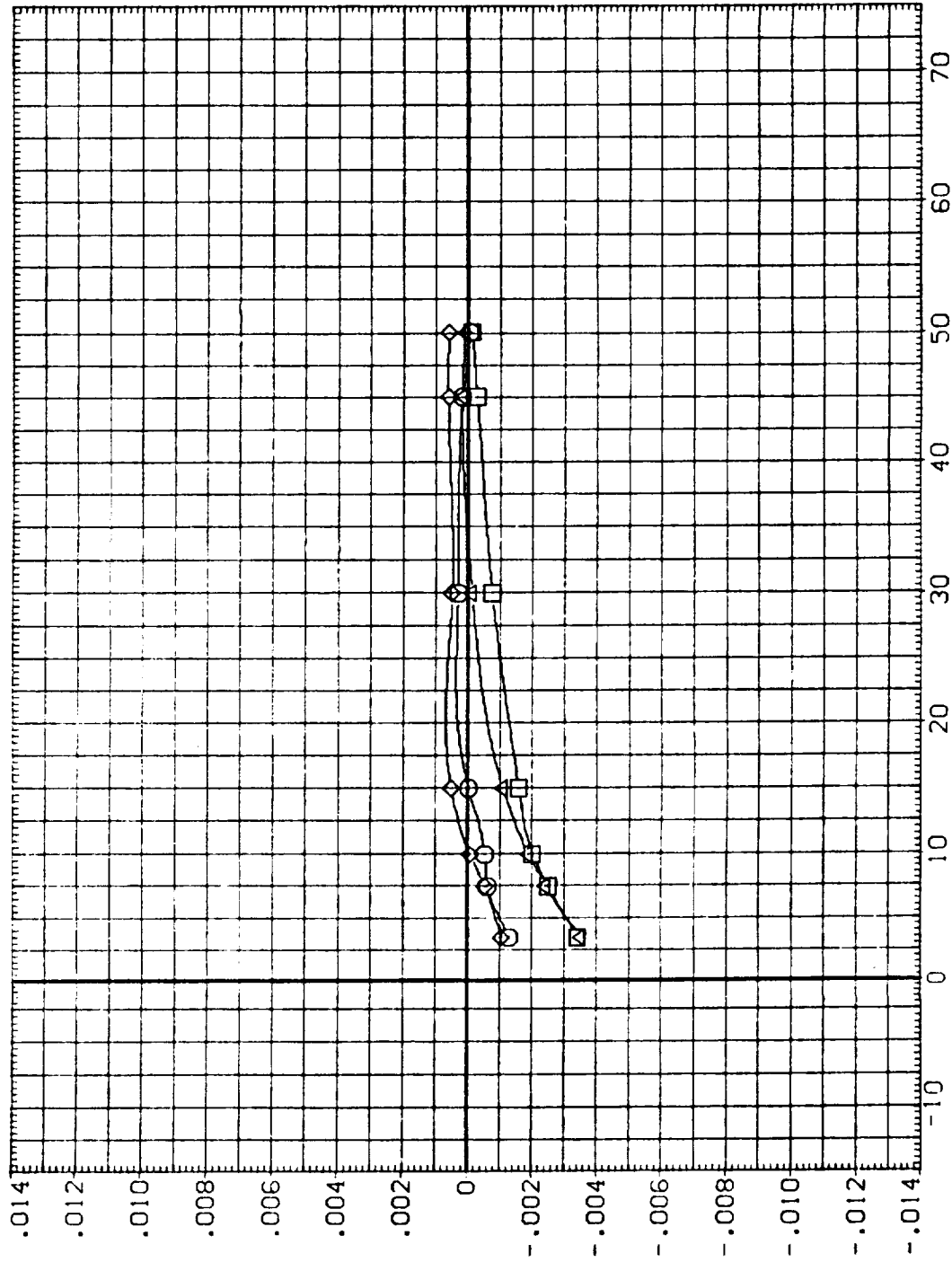


FIG. 62 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, CARRIER, (IORB= 6.0 DEG.)

(B) ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH038)	ARC 14-120(CA23B) 747/1 AT1 03S1 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.3400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (CARRIER DATA)	6.000	5.000	.600	5.000	XMRP 1339.9000 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0125

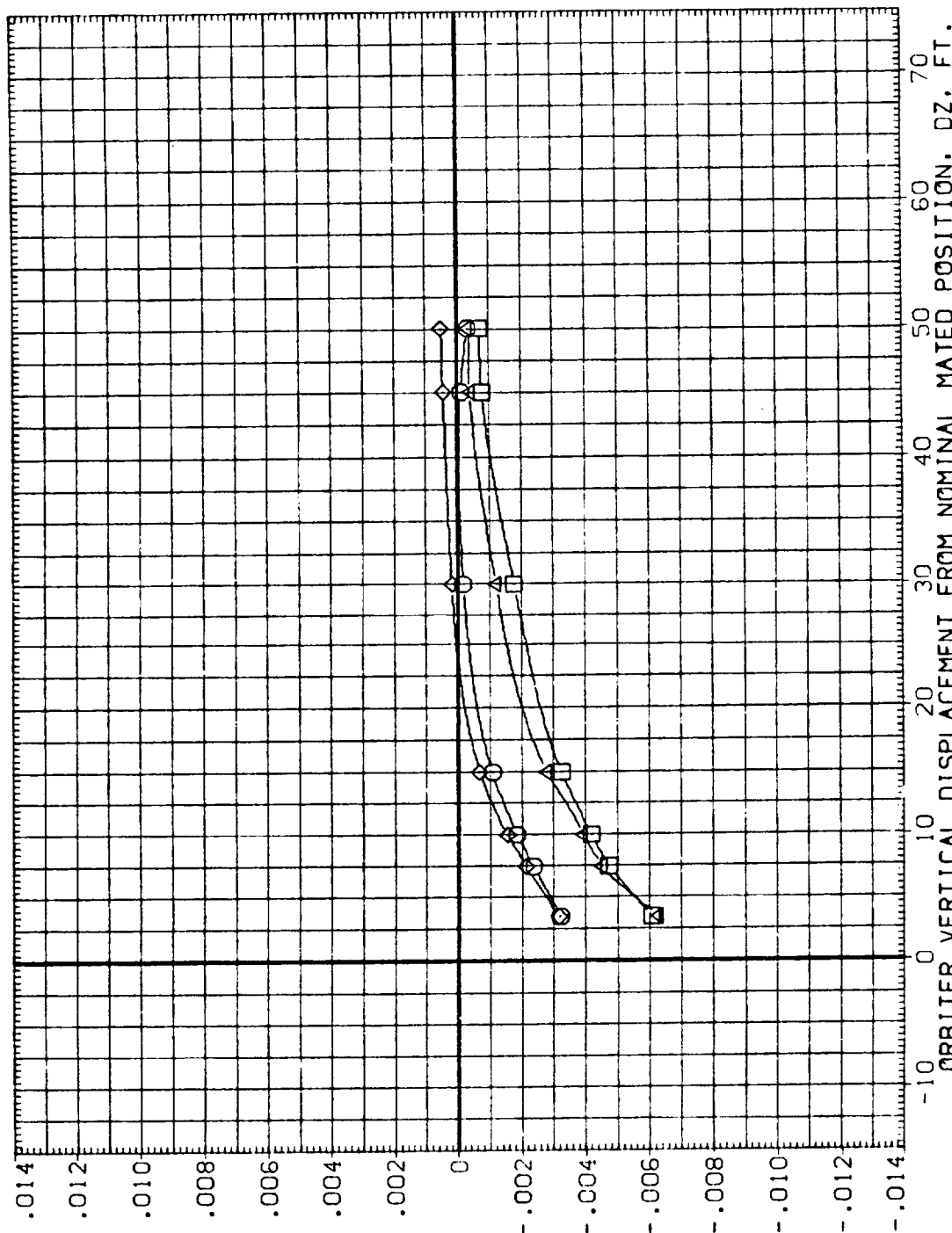
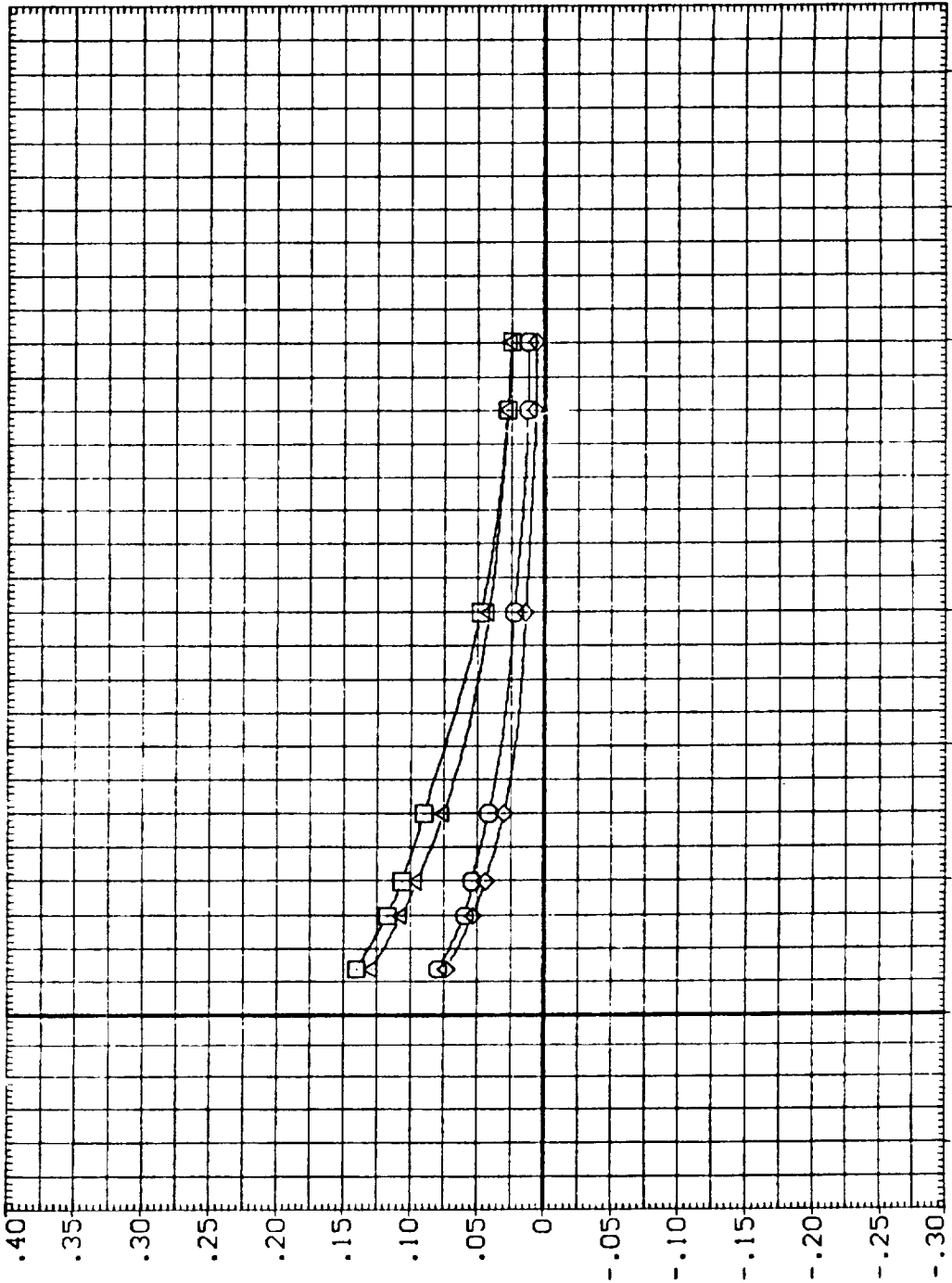


FIG. 62 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, CARRIER, (IORB= 6.0 DEG.)

(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(PNH034)	ARC 14-120(CA238) 747/1 AT1 Q351 (CARRIER DATA)	6.000	.000	.600	5.000	SREF	5500.0000	SQ.FT.	
(PNH038)	ARC 14-120(CA238) 747/1 AT1 Q351 (CARRIER DATA)	6.000	5.000	.600	5.000	LREF	327.7800	IN.	
(PNH023)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	6.000	.000	.600	5.000	BREF	2348.0400	IN.	XC
(PNH013)	ARC 14-120(CA238) 747/1 AT1 Q251 (CARRIER DATA)	6.000	5.000	.600	5.000	YMRP	1339.9000	IN.	YC
						ZMRP	190.7500	IN.	ZC
						SCALE	.0125		



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 62 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, CARRIER, (IORB= 6.0 DEG.)  
 (ALPHAC= .00) PAGE 523

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IOB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(PNH034)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	SREF 5500.0000 SQ.FT.
(PNH038)	ARC 14-120(CA23B) 747/1 AT1 0351 (CARRIER DATA)	6.000	.000	.600	5.000	LREF 327.7800 IN.
(PNH023)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	BREF 2348.0400 IN.
(PNH013)	ARC 14-120(CA23B) 747/1 AT1 0251 (CARRIER DATA)	6.000	.000	.600	5.000	YMRP 1339.9000 IN. XC
						ZMRP .0000 IN. YC
						SCALE 190.7500 IN. ZC
						.0125

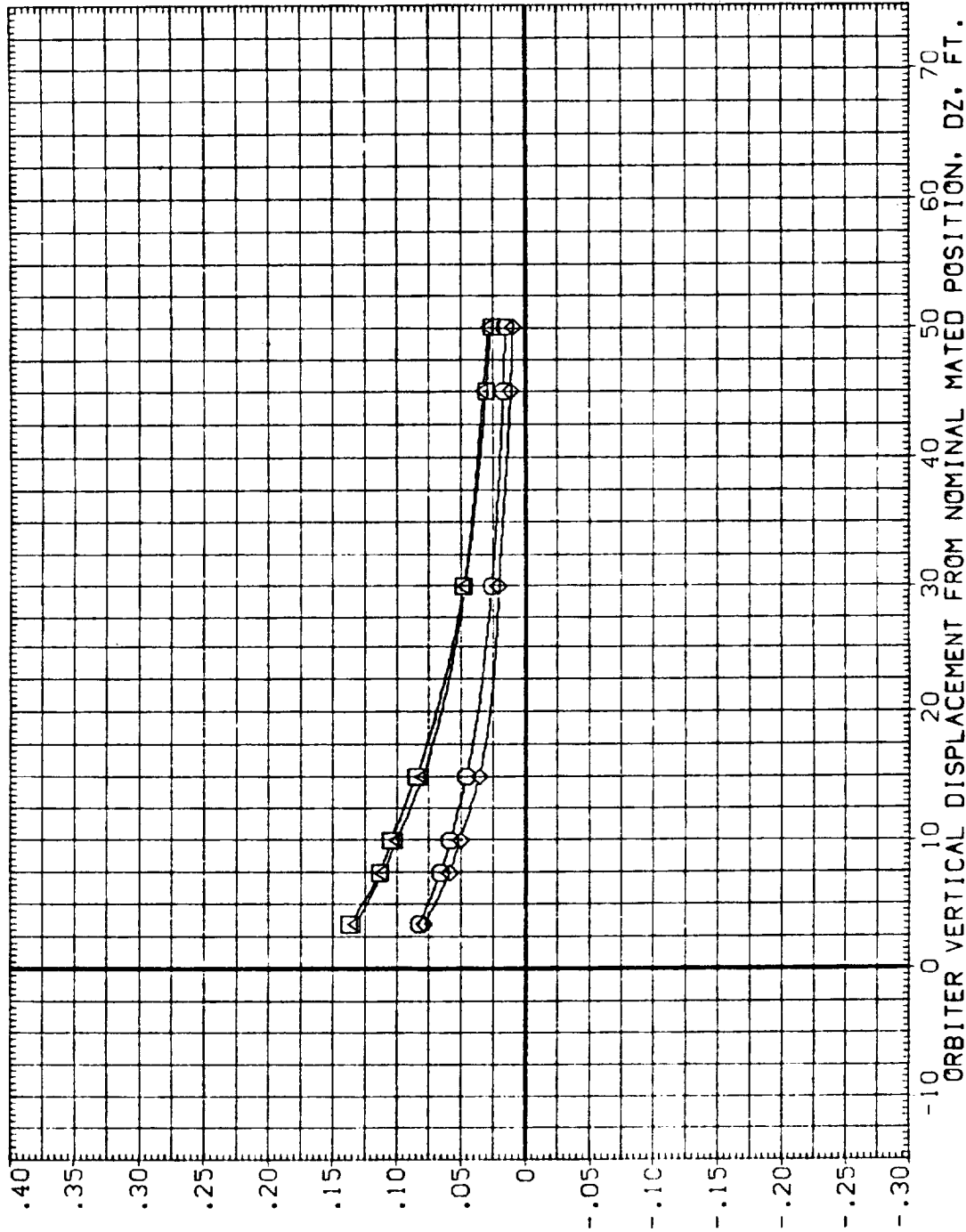


FIG. 62 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, CARRIER, (IOB= 6.0 DEG.)

(B)ALPHAC= 2.00

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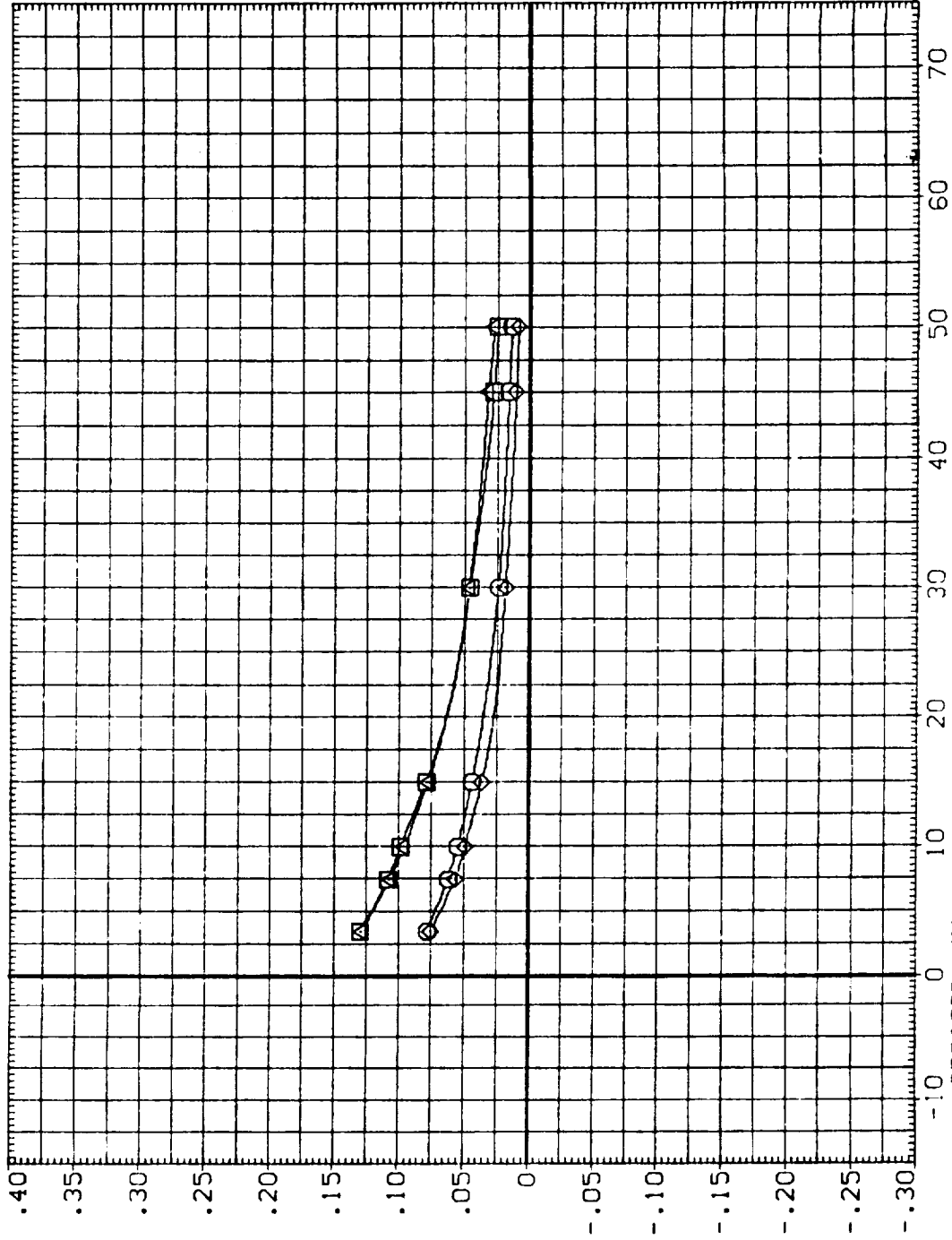
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# DATA SET SYMBOL CONFIGURATION DESCRIPTION

(PNH034)  
(PNH038)  
(PNH023)  
(PNH013)

ARC 14-120(CA23B) 747/1 AT1 C3S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 C3S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 C2S1 (CARRIER DATA)  
ARC 14-120(CA23B) 747/1 AT1 C2S1 (CARRIER DATA)

IORB 6.000 6.000 6.000 6.000  
ELEVON 5.000 5.000 5.000 5.000  
MACH .600 .600 .600 .600  
STAB 5.000 5.000 5.000 5.000  
REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125



INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

FIG. 62 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, CARRIER, (IORB= 6.0 DEG.)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA238)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH038)	ARC 14-120(CA238)	6.000	.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA238)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA238)	6.000	.000	.600	5.000	XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

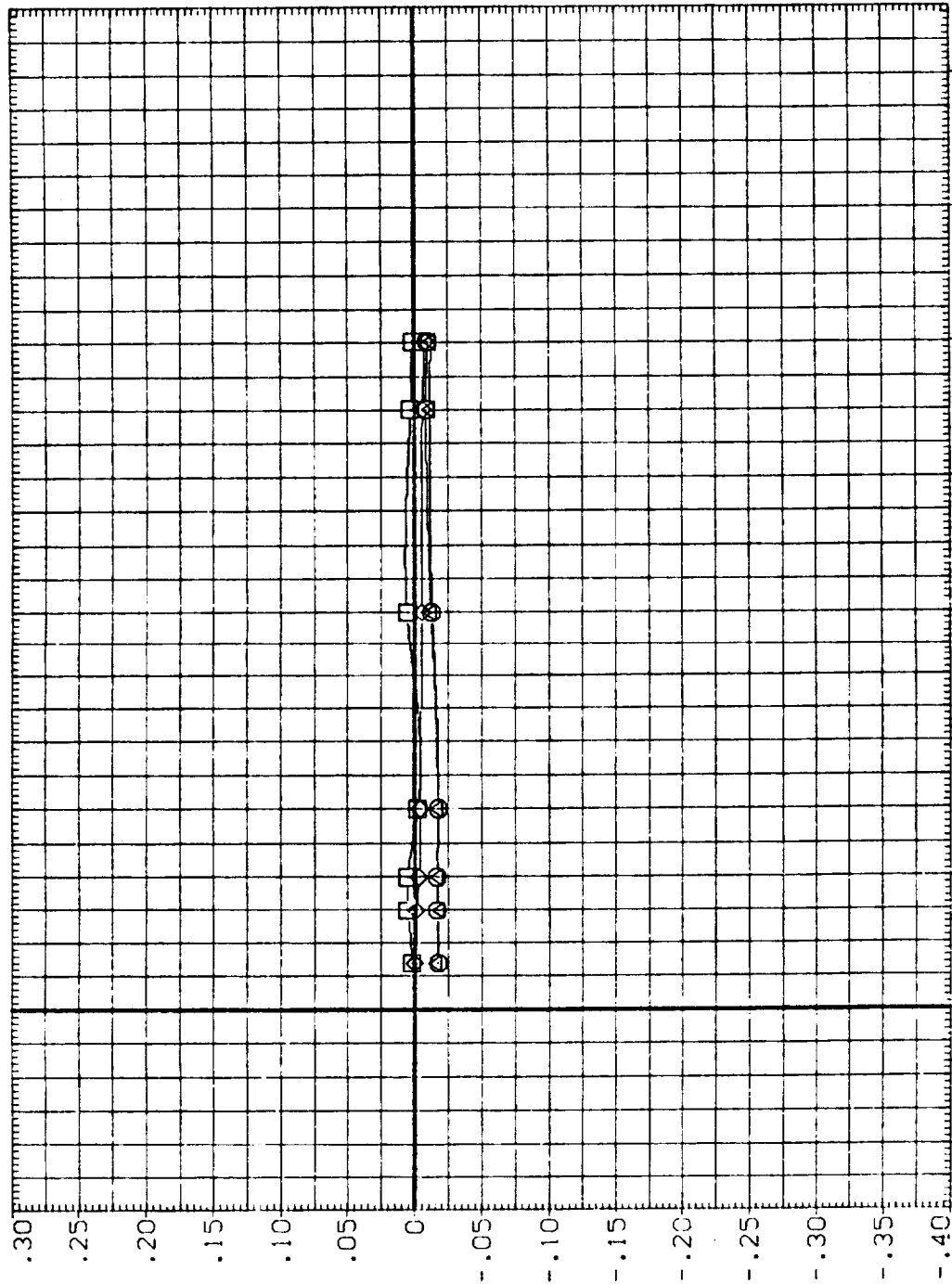
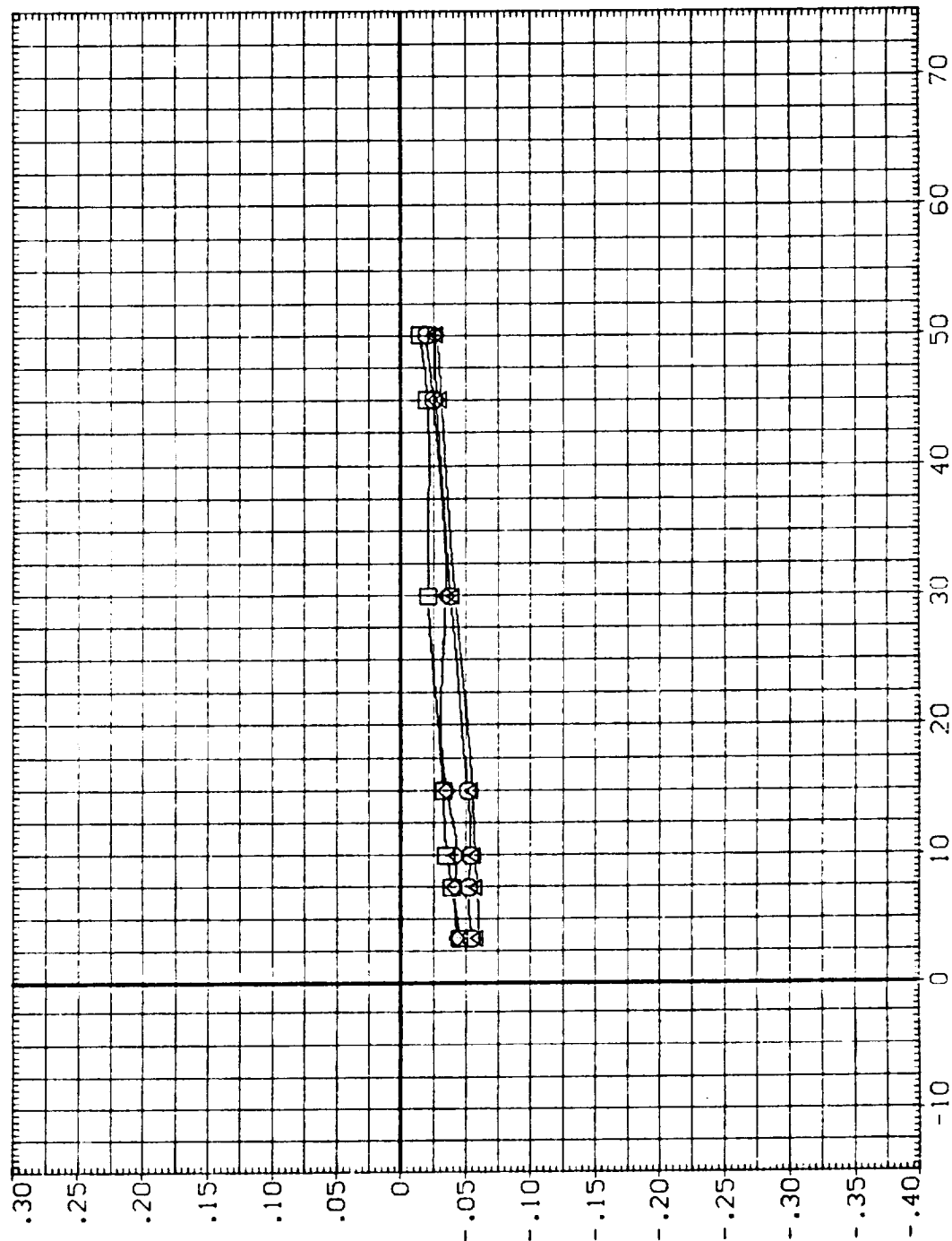


FIG. 63 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, ORBITER, (IORB= 6.0 DEG.)  
 (A)ALPHAC= .00 PAGE 528

INCREMENTAL LIFT FORCE COEFFICIENT, DCL



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION			
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	6.000	.000	.600	5.000	SREF	2690.0000	SQ.FT.	
(4NH038)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF	474.8100	IN.	
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	.000	.600	5.000	BREF	936.6800	IN.	
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP	1109.0000	IN. X0	
						YMRP	.0000	IN. Y0	
						ZMRP	375.0000	IN. Z0	
						SCALE	.0125		



INCREMENTAL LIFT FORCE COEFFICIENT, DCL

FIG. 63 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, ORBITER, (IORB= 6.0 DEG.)

INCREMENTAL LIFT FORCE COEFFICIENT, DCL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORRB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORB/ITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH038)	ARC 14-120(CA23B) 747/1 AT1 Q3S1 (ORB/ITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB/ITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 Q2S1 (ORB/ITER DATA)	6.000	5.000	.600	5.000	XMPP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

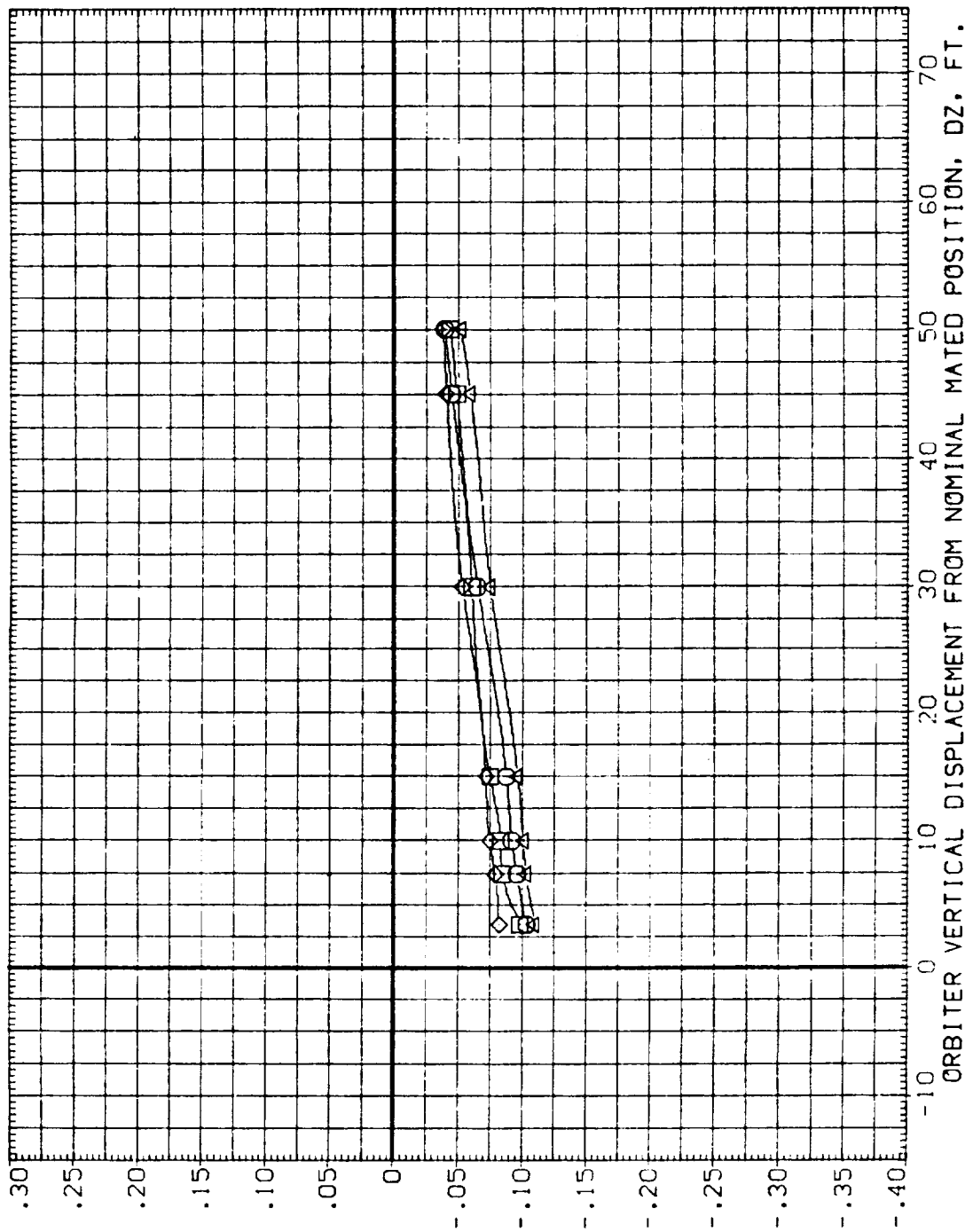


FIG. 63 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, ORBITER, (IORB= 6.0 DEG.)

(C)ALPHAC= 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA238) 747.1 AT: Q351 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH038)	ARC 14-120(CA238) 747.1 AT: Q351 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA238) 747.1 AT: Q251 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA238) 747.1 AT: Q251 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP 1109.0000 IN. Y0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

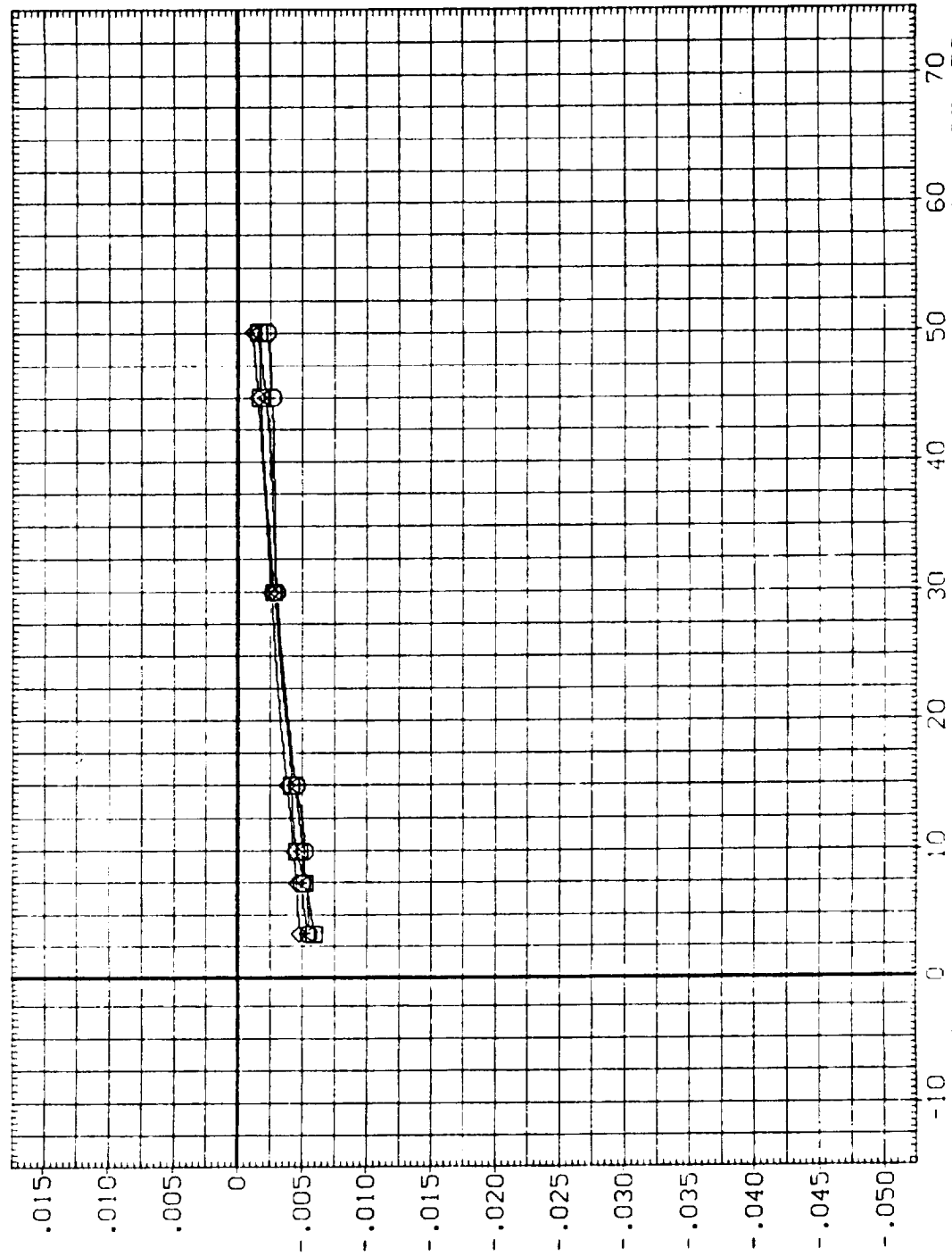


FIG. 63 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, ORBITER, (IORB= 6.0 DEG.)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH038)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

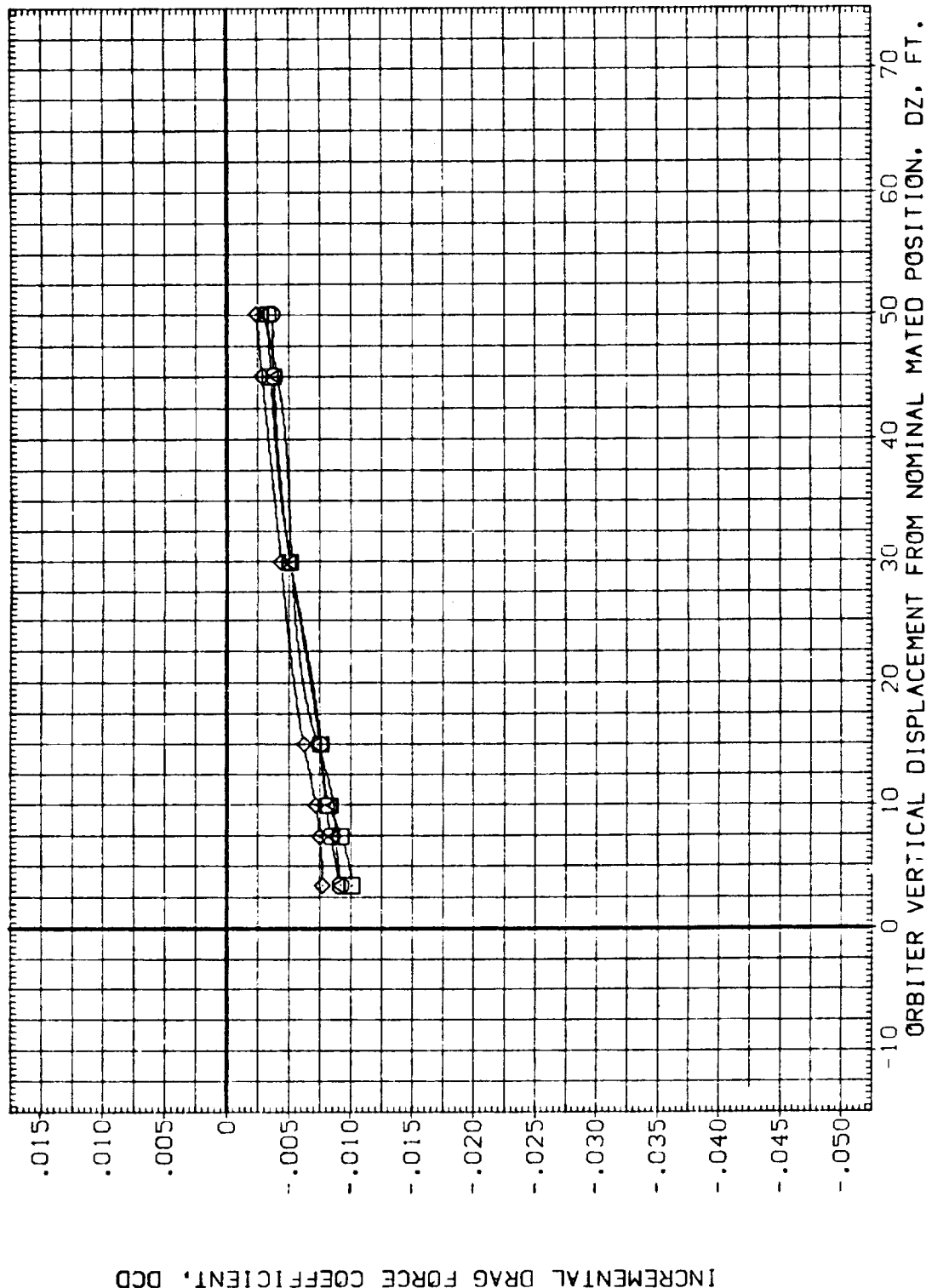
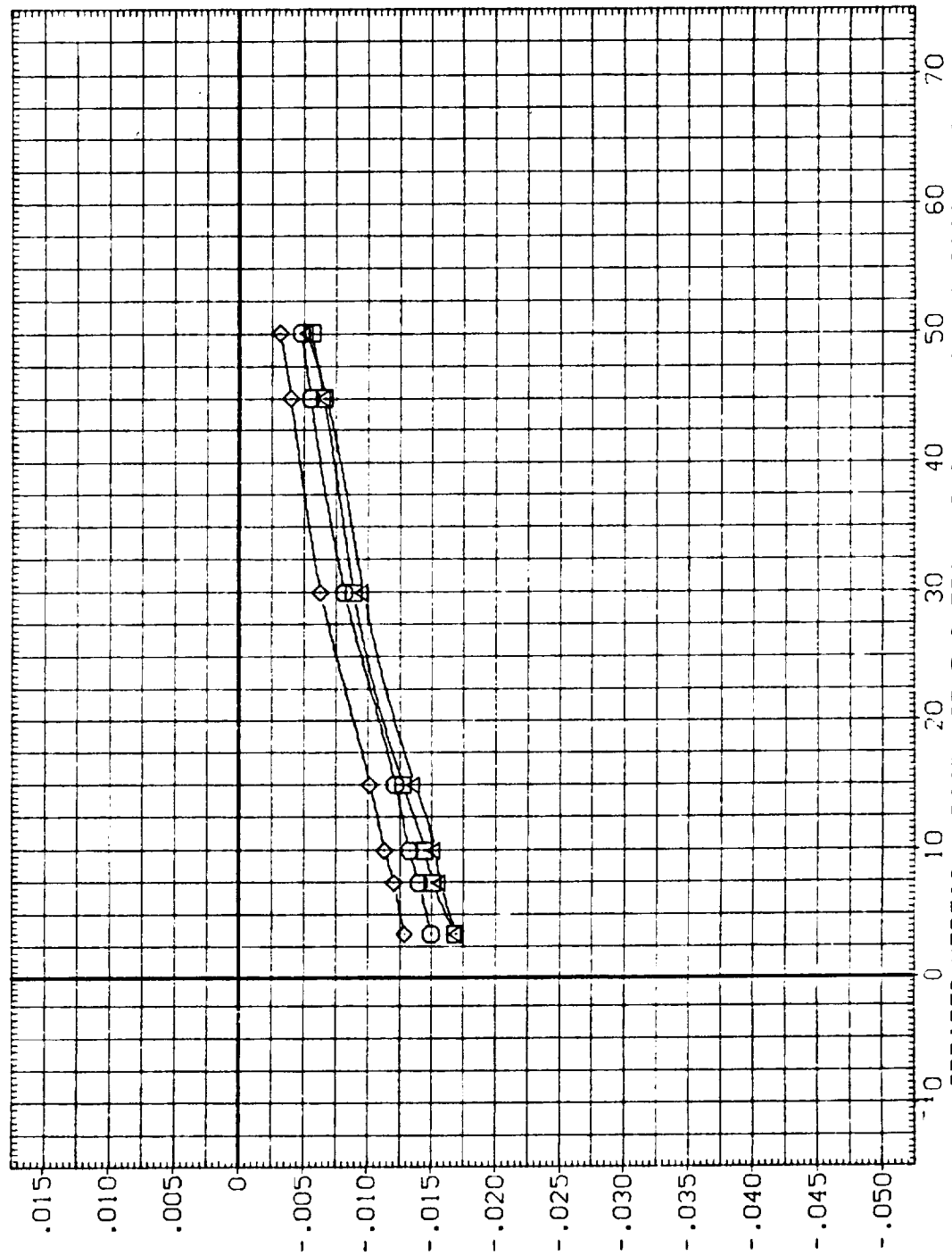


FIG. 63 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, ORBITER, (IORB= 6.0 DEG.)  
(B) ALPHA= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH038)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN. X0
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125



INCREMENTAL DRAG FORCE COEFFICIENT, DCD

FIG. 63 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, ORBITER. (IORB= 6.0 DEG.)

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

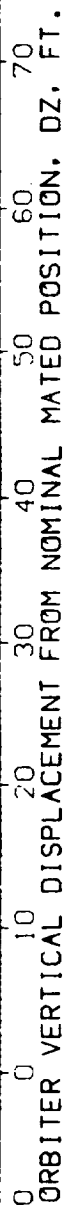


FIG. 63 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, ORBITER, (IORB= 6.0 DEG.)

(CALPHAC=.00

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ORIGINAL PAGE IS POOR

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4N-034)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4N-038)	ARC 14-120(CA238) 747/1 AT1 0351 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
(4N-023)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 936.6800 IN.
(4N-013)	ARC 14-120(CA238) 747/1 AT1 0251 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

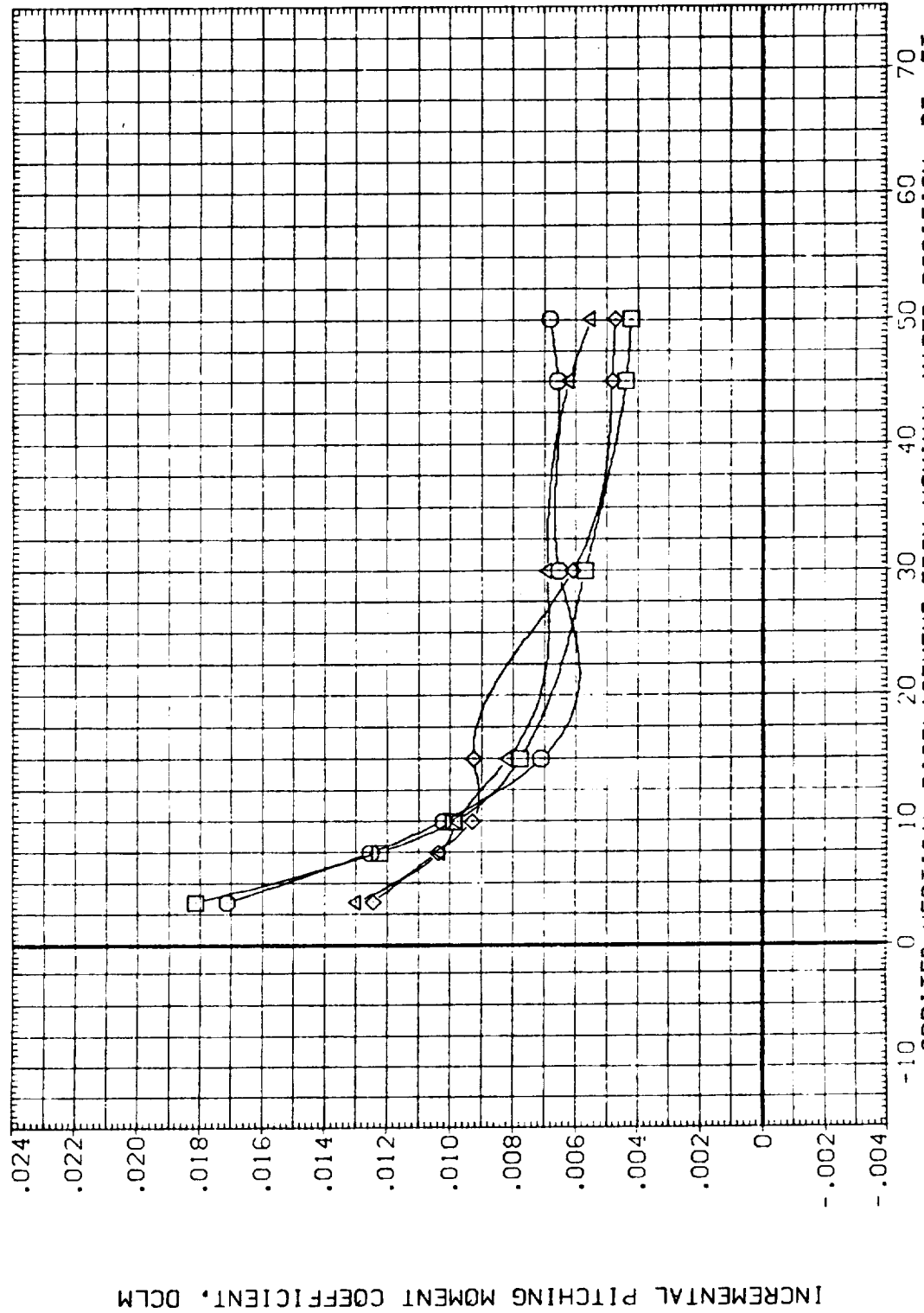


FIG. 63 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, ORBITER, (IORB= 6.0 DEG.)  
 (B)ALPHAC= 2.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	IORB	ELEVON	MACH	STAB	REFERENCE INFORMATION
(4NH034)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)	6.000	.000	.600	5.000	SREF 2690.0000 SQ.FT.
(4NH038)	ARC 14-120(CA23B) 747/1 AT1 03S1 (ORBITER DATA)	6.000	5.000	.600	5.000	LREF 474.8100 IN.
(4NH023)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	.000	.600	5.000	BREF 935.6800 IN.
(4NH013)	ARC 14-120(CA23B) 747/1 AT1 02S1 (ORBITER DATA)	6.000	5.000	.600	5.000	XMRP 1109.0000 IN. X0
						YMRP .0000 IN. Y0
						ZMRP 375.0000 IN. Z0
						SCALE .0125

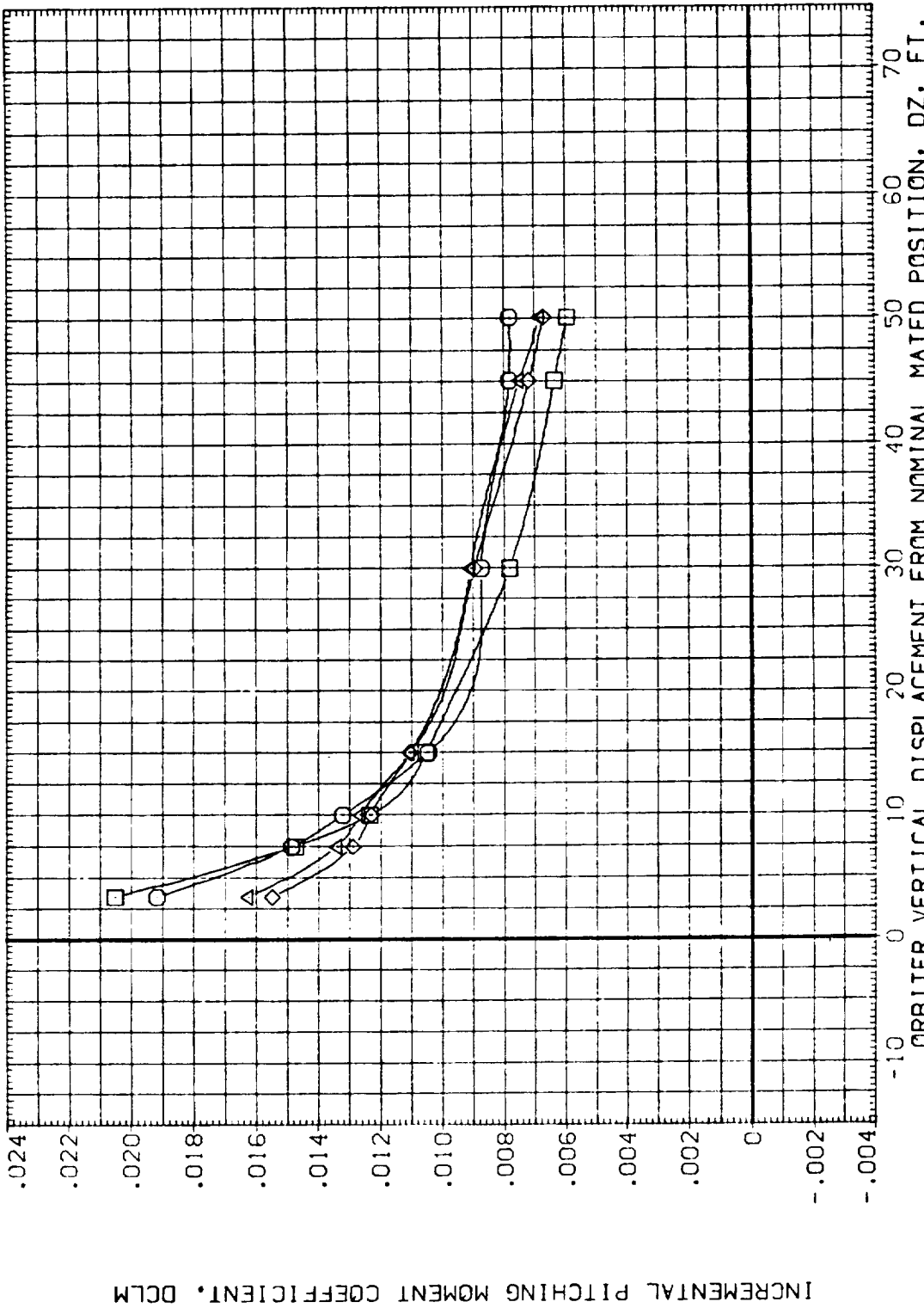


FIG. 63 EFFECT OF ORB TAILCONE ON ORBITER ELEVON POWER, ORBITER, (IORB= 6.0 DEG.)

(C)ALPHAC= 4.00 PAGE 534



DATA SET SYMBOL (RNH004) (RNH005) CONFIGURATION DESCRIPTION ARC 14-120(CA238) 747/1 AT1 ARC 14-120(CA238) 747/1 AT1

RUDDER STAB MACH  
.000 -1.000 .600  
.000 5.000 .600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

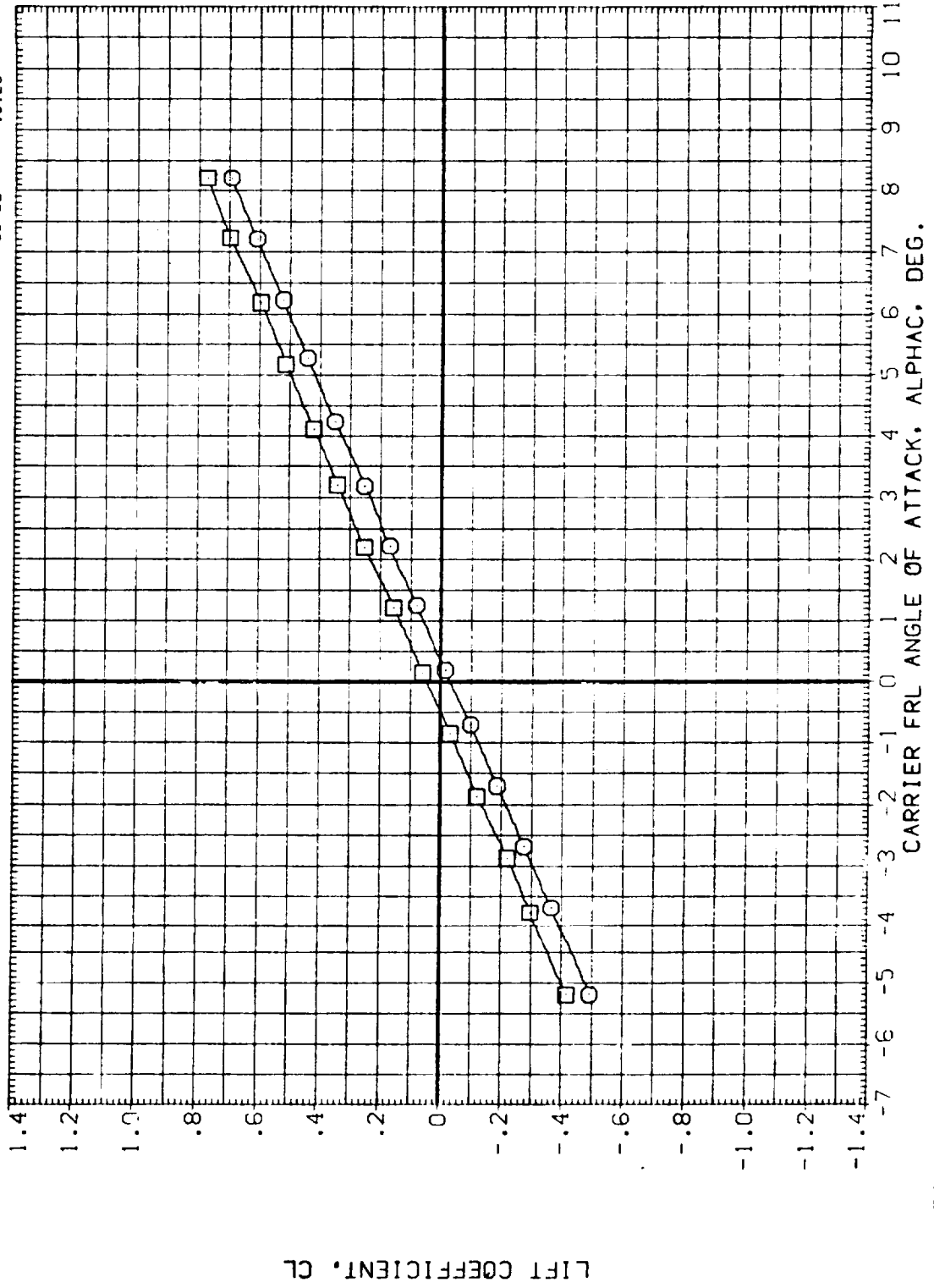


FIG. 64 EFFECT OF STABILIZER ON CARRIER ALONE

(A)DZ = 131.93

DATA SET SYMBOL (RNH004) (RNH005)

CONFIGURATION DESCRIPTION ARC 14-120(CA23B) 747/1 AT1  
ARC 14-120(CA23B) 747/1 AT1

RUDDER STAB MACH  
.000 -1.000 .600  
.000 5.000 .600

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2349.0400 IN.  
XMRP 1339.9000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125

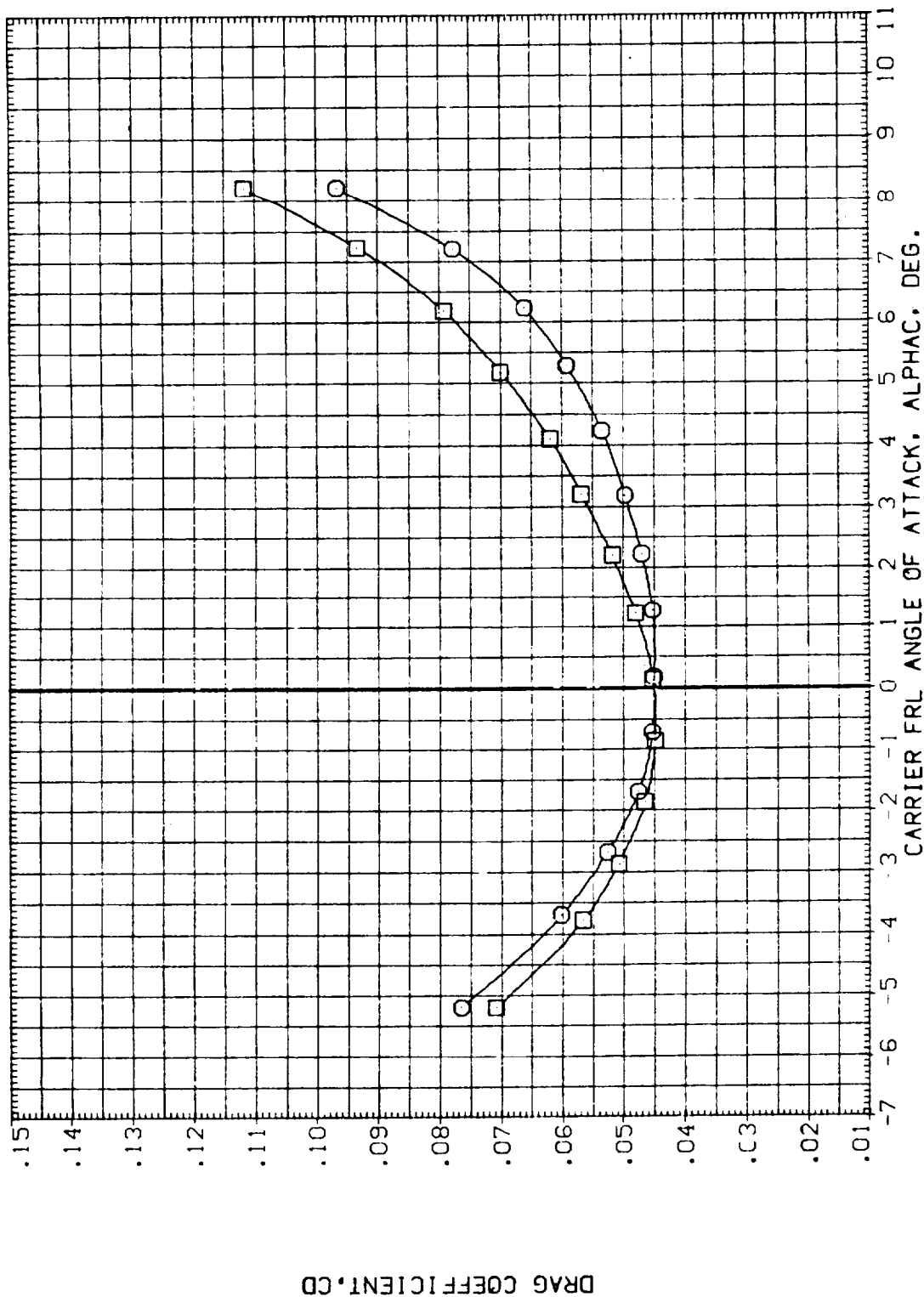


FIG. 64 EFFECT OF STABILIZER ON CARRIER ALONE

(A)DZ = 131.93

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (RNH004)    APC 14-120(CA238) 747/1 AT1  
 (RNH005)    ARC 14-120(CA238) 747/1 AT1

RUDDER    STAB    MACH  
 .000    -1.000    .600  
 .000    5.000    .600

REFERENCE INFORMATION  
 SREF 5500.0000 SO.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0400 IN.  
 XMRP 1339.9000 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0125

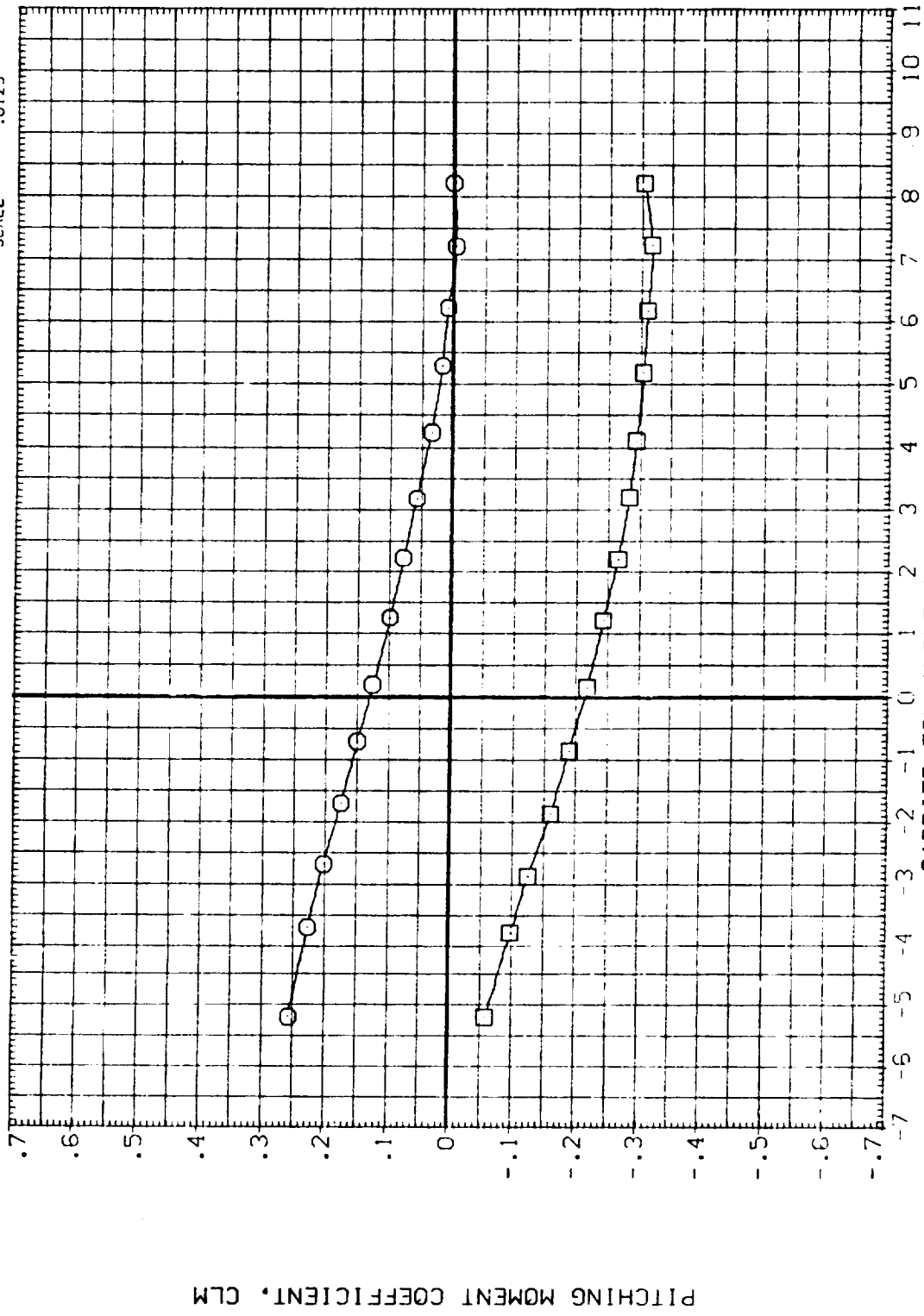


FIG. 64 EFFECT OF STABILIZER ON CARRIER ALONE

(A)CZ = 131.92

DATA SET SYMBOL      CONFIGURATION DESCRIPTION

(MNH004)      ARC14-120(CA238) 747/1 AT1 RIG IN

(MNH005)      ARC14-120(CA238) 747/1 AT1 RIG IN

(ME9819)      ARC14-080-1 CA23 747/1 AT1 RIG OUT

(ME9817)      ARC14-080-1 CA23 747/1 AT1 RIG OUT

BETA      RUDDER      STAB

.000      .000      -1.000

.000      .000      5.000

.000      .000      -1.000

.000      .000      5.000

REFERENCE INFORMATION

SREF      5500.0000      SQ.FT.

LREF      327.7800      IN.

BREF      2348.0400      IN.

XMRP      1339.9000      IN.

YMRP      .0000      IN.

ZMRP      190.7300      IN.

SCALE      .0125

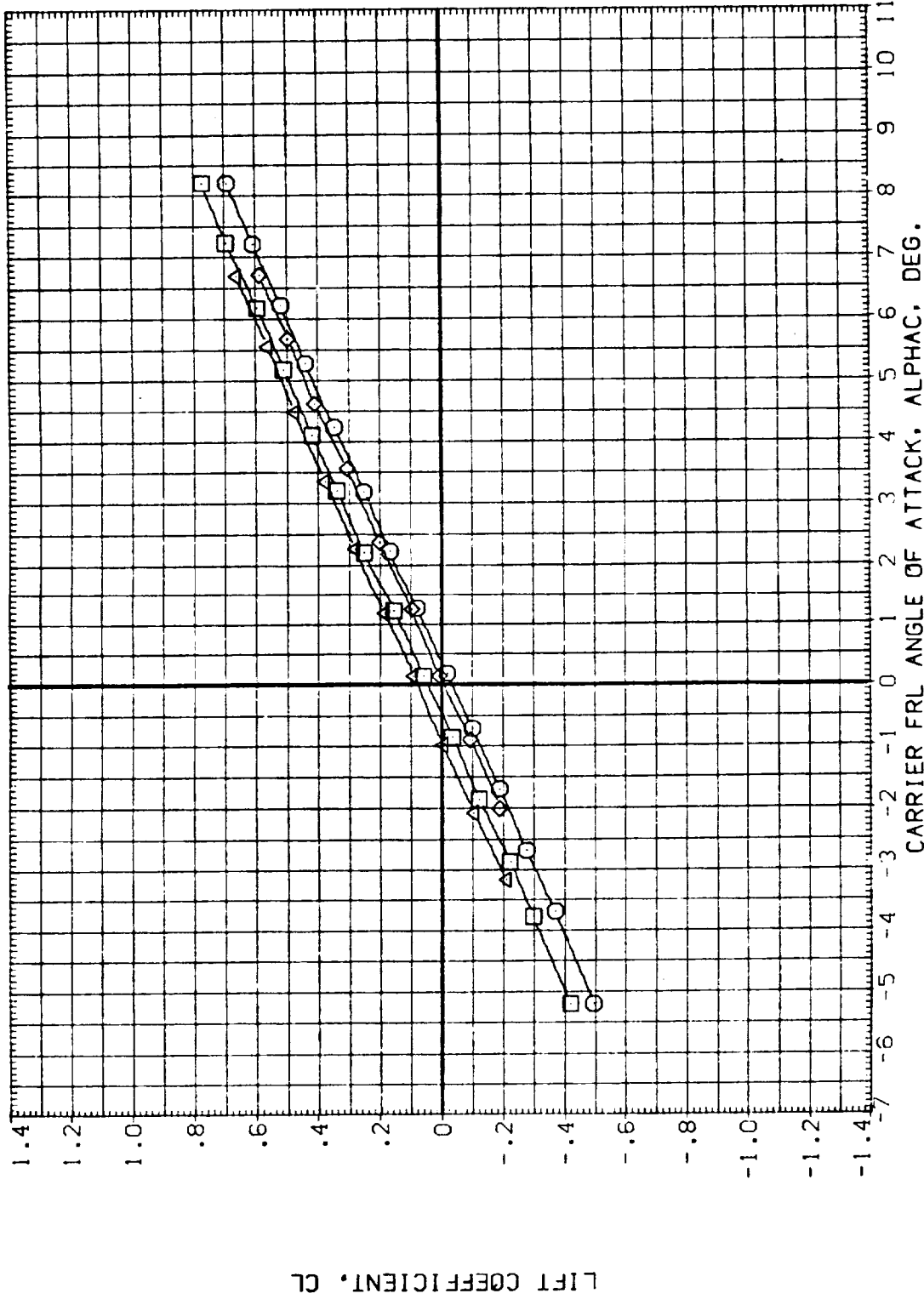


FIG. 65 EFFECT OF SEPARATION RIG ON CARRIER ALONE

(A)MACH = .59

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	RUDDER	STAB	REFERENCE INFORMATION
(MNH004)	ARC14-120(CA23B) 747/1 AT1 RIG IN	.000	.000	-1.000	SREF 5500.0000 SQ.FT.
(MNH005)	ARC14-120(CA23B) 747/1 AT1 RIG IN	.000	.000	5.000	LREF 327.7800 IN.
(ME9819)	ARC14-080-1 CA23 747/1 AT1 RIG OUT	.000	.000	-1.000	BREF 2348.0400 IN.
(ME9817)	ARC14-080-1 CA23 747/1 AT1 RIG OUT	.000	.000	5.000	YMRP 1339.9000 IN. XC
					ZMRP .0000 IN. YC
					SCALE 190.7500 IN ZC
					.0125

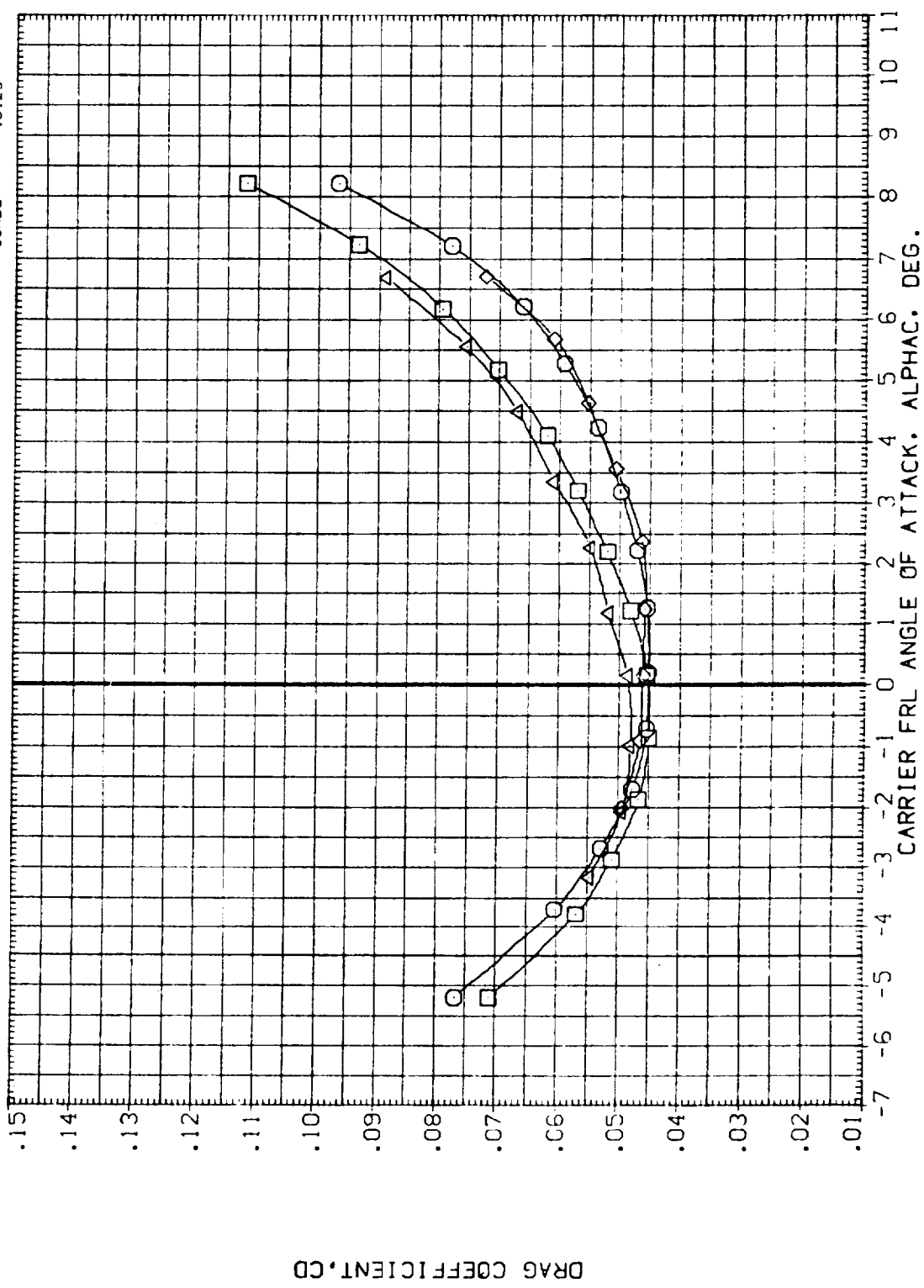


FIG. 65 EFFECT OF SEPARATION RIG ON CARRIER ALONE

(A)MACH = .59

DATA SET SYMBOL  
(MNH004)  
(MNH005)  
(ME9819)  
(ME9817)

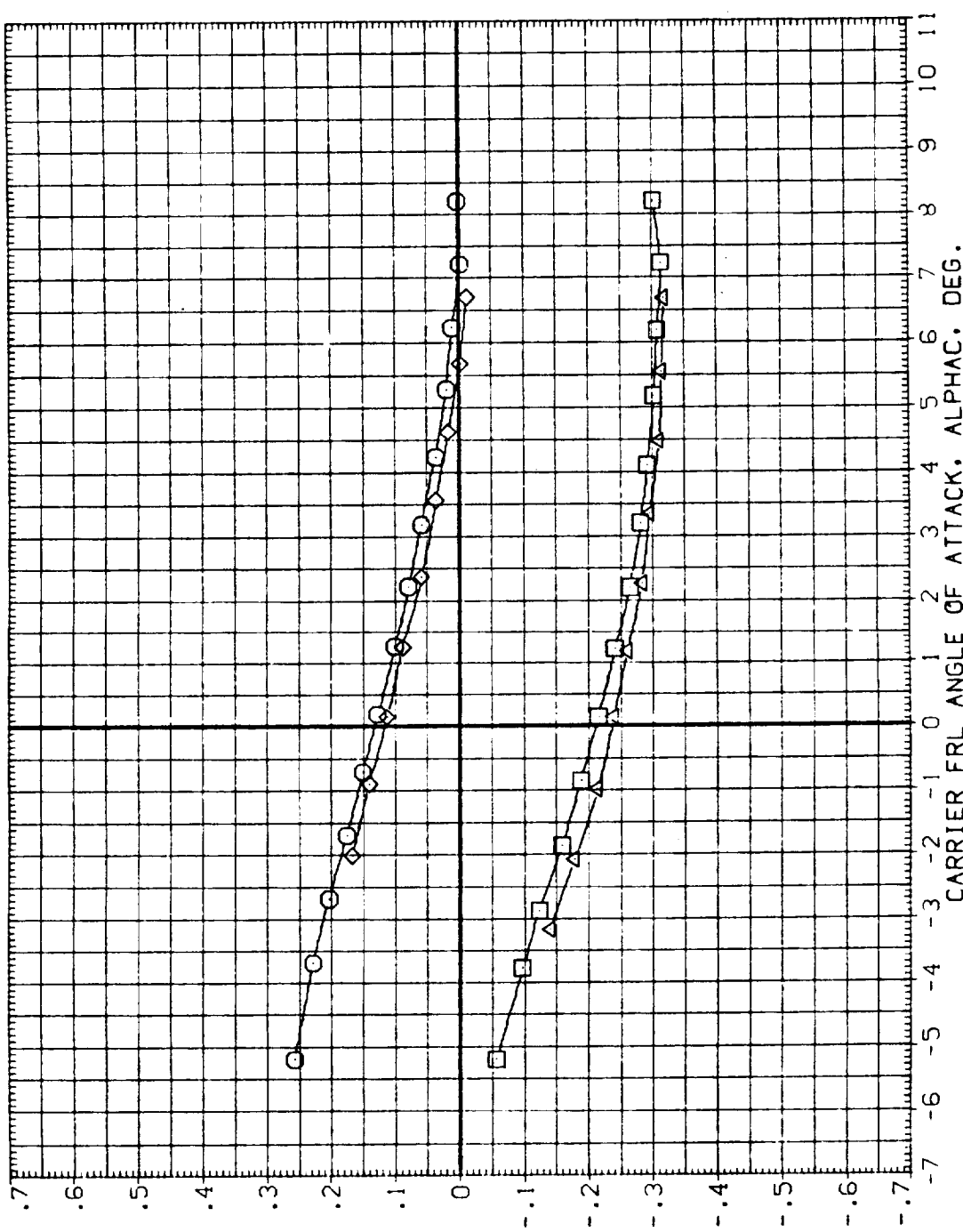
CONFIGURATION DESCRIPTION  
ARC14-120(CA238) 747/1 AT1 RIG IN  
ARC14-120(CA238) 747/1 AT1 RIG IN  
ARC14-080-1 CA23 747/1 AT1 RIG OUT  
ARC14-080-1 CA23 747/1 AT1 RIG OUT

BETA  
.000  
.000  
.000  
.000  
.000

RUDDER  
.000  
.000  
.000  
.000  
.000

STAB  
-1.000  
5.000  
-1.000  
5.000

REFERENCE INFORMATION  
SREF 5500.0000 SQ.FT.  
LREF 327.7800 IN.  
BREF 2348.0400 IN.  
XMRP 1339.5000 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0125



PITCHING MOMENT COEFFICIENT, CLM

CARRIER FRL ANGLE OF ATTACK, ALPHAC, DEG.

FIG. 65 EFFECT OF SEPARATION RIG ON CARRIER ALONE

(A)MACH = .59

DATA SET SYMBOL      CONFIGURATION DESCRIPTION  
 (MNH045)      ARC 14-120(CA238) 035!  
 (MNH044)      ARC 14-120(CA238) 035!  
 (MNH045)      ARC 14-120(CA238) 035!  
 (MNH043)      ARC 14-120(CA238) 035!

BETA      ELEVON      DZ  
 .000      .000      40.000  
 .000      5.000      60.000  
 .000      .000      40.000  
 .000      5.000      40.000

REFERENCE INFORMATION  
 SREF      2690.0000      SQ.FT.  
 LREF      474.8100      IN.  
 BREF      936.6800      IN.  
 XMRP      1109.0000      IN. X0  
 YMRP      .0000      IN. Y0  
 ZMRP      375.0000      IN. Z0  
 SCALE      .0125

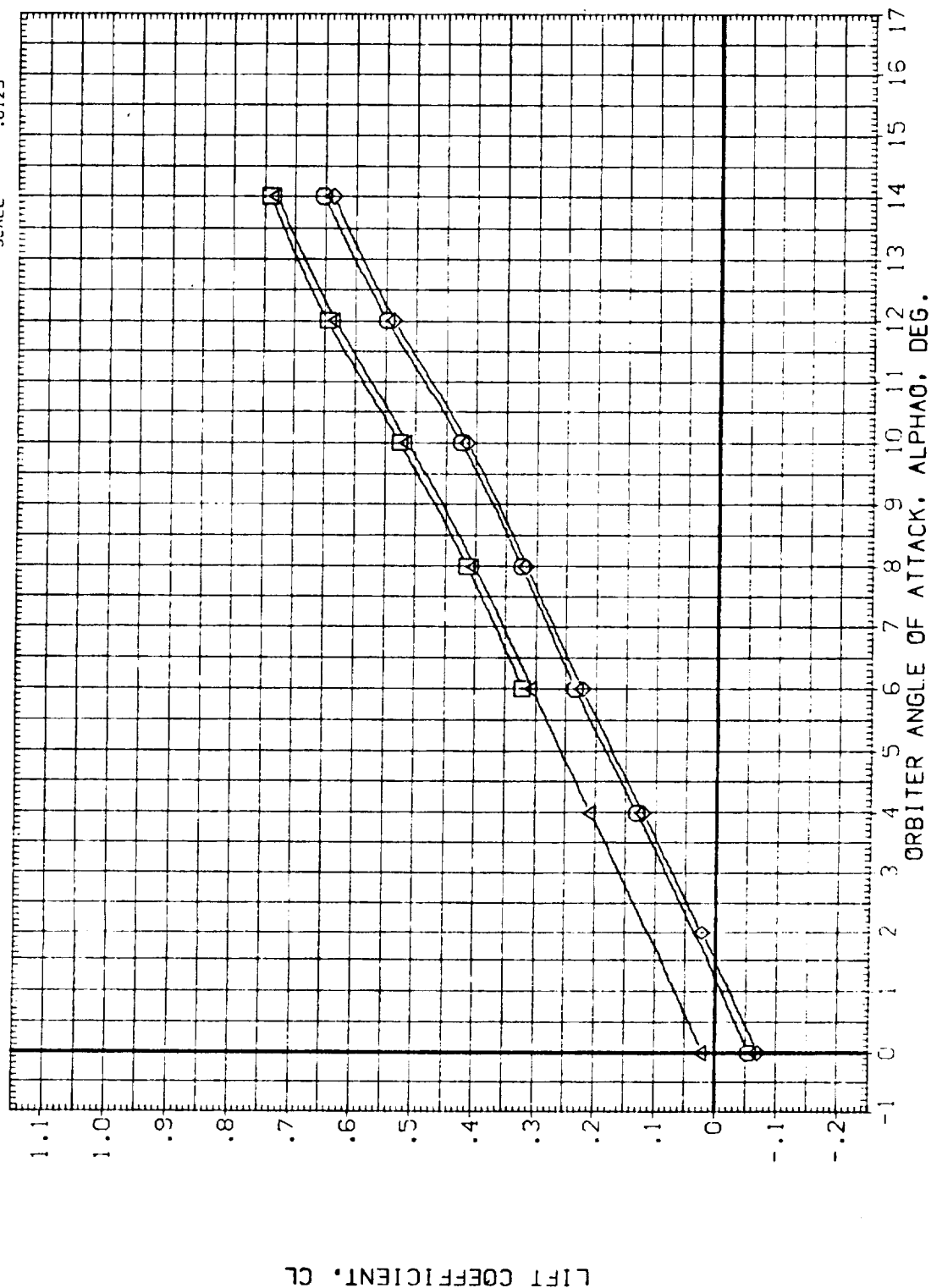


FIG. 66 EFFECT OF TAILCONE ON ORBITER ALONE ELEVON EFFECTIVENESS

(A) MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(MNH045) ARC 14-120(CA23B) 03S1

(MNH044) ARC 14-120(CA23B) 03S1

(MNH046) ARC 14-120(CA23B) 02S1

(MNH043) ARC 14-120(CA23B) 02S1

BETA ELEVON DZ

.000 .000 40.000

.000 5.000 60.000

.000 .000 40.000

.000 5.000 40.000

REFERENCE INFORMATION

SREF 2690.0000 SO.FT.

LREF 474.8100 IN.

BREF 936.6800 IN.

XMRP 1109.0000 IN. X0

YMRP .0000 IN. Y0

ZMRP 375.0000 IN. Z0

SCALE .0125

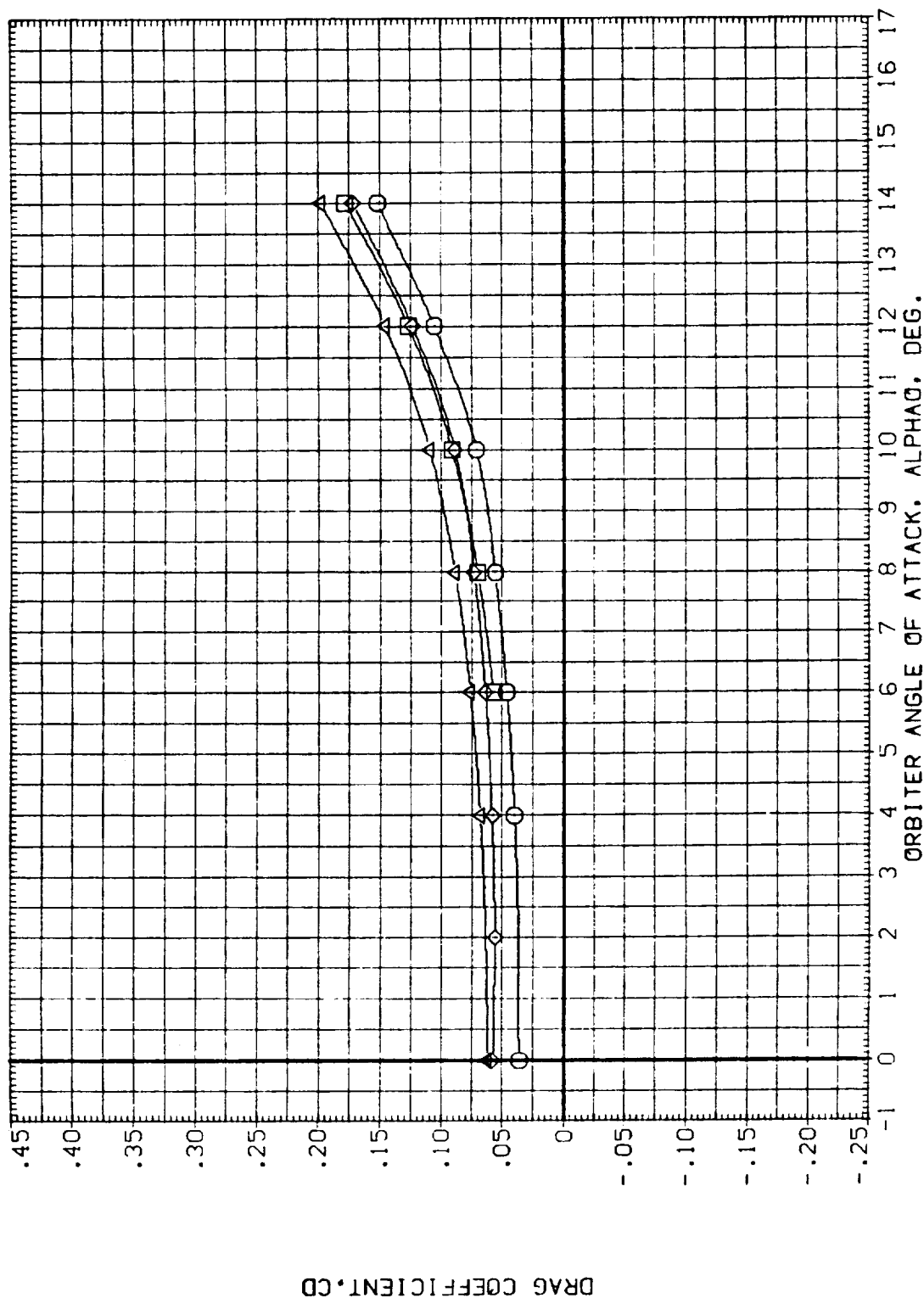


FIG. 66 EFFECT OF TAILCONE ON ORBITER ALONE ELEVON EFFECTIVENESS

(A)MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (MNH045) ARC 14-120(CA23B) 03S1  
 (MNH044) APC 14-120(CA23B) 03S1  
 (MNH046) ARC 14-120(CA23B) 02S1  
 (MNH043) ARC 14-120(CA23B) 02S1

BETA ELEVON DZ  
 .000 .000 40.000  
 .000 .000 60.000  
 .000 .000 40.000  
 .000 .000 40.000

REFERENCE INFORMATION  
 SREF 2690.0000 SQ.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

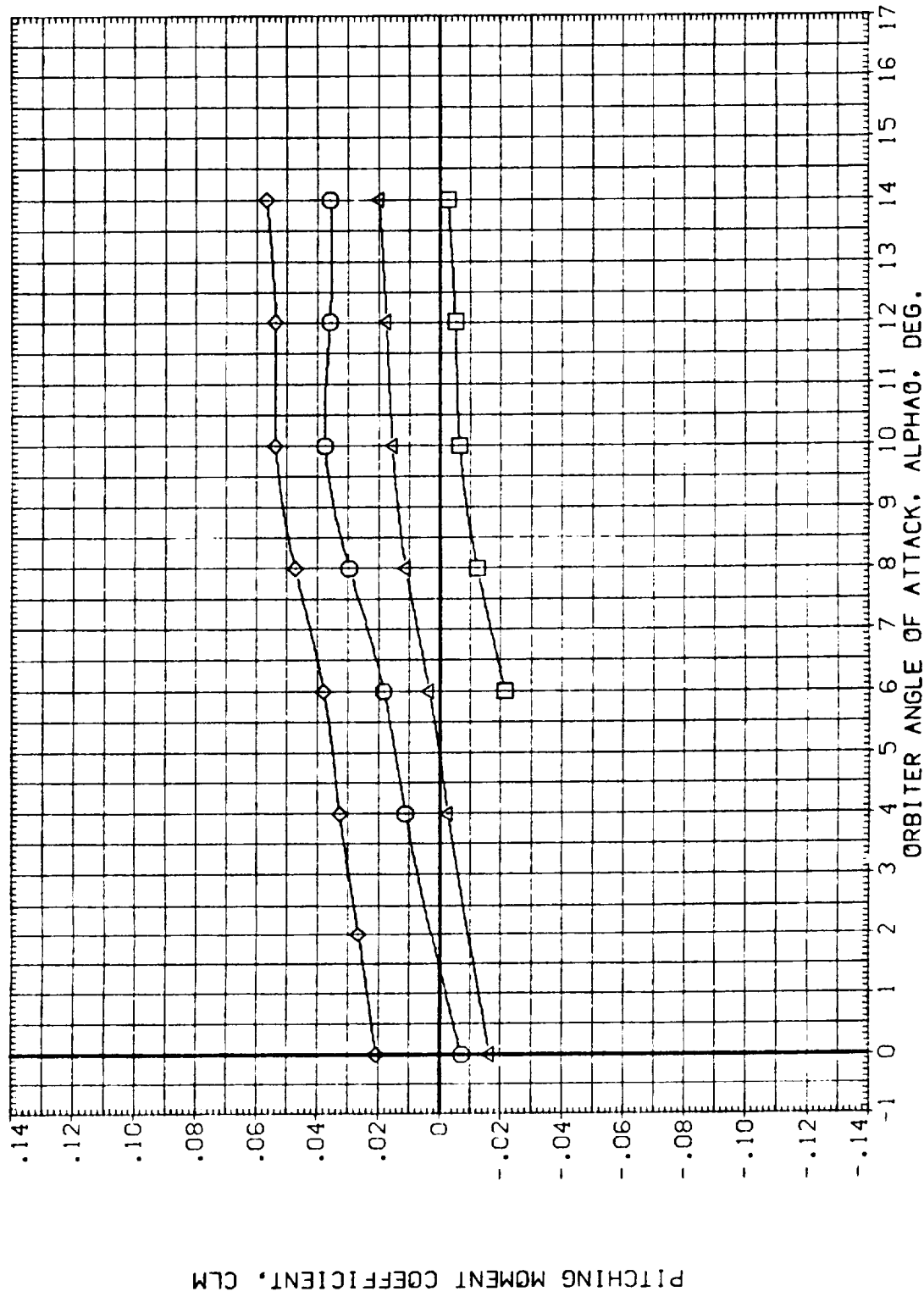


FIG. 66 EFFECT OF TAILCONE ON ORBITER ALONE ELEVON EFFECTIVENESS

(M)MACH = .60

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (INH048)    ARC 14-120(CA238)    02S1  
 (INH047)    ARC 14-120(CA238)    02S1

ELEVON    BETA    DZ  
 .000    .000    3.000  
 .000    .000    50.000

REFERENCE INFORMATION  
 SREF    2690.0000    SQ.FT.  
 LREF    474.8100    IN.  
 BREF    936.6800    IN.  
 XMRP    1109.0000    IN. X0  
 YMRP    .0000    IN. X0  
 ZMRP    375.0000    IN. X0  
 SCALE    .0125

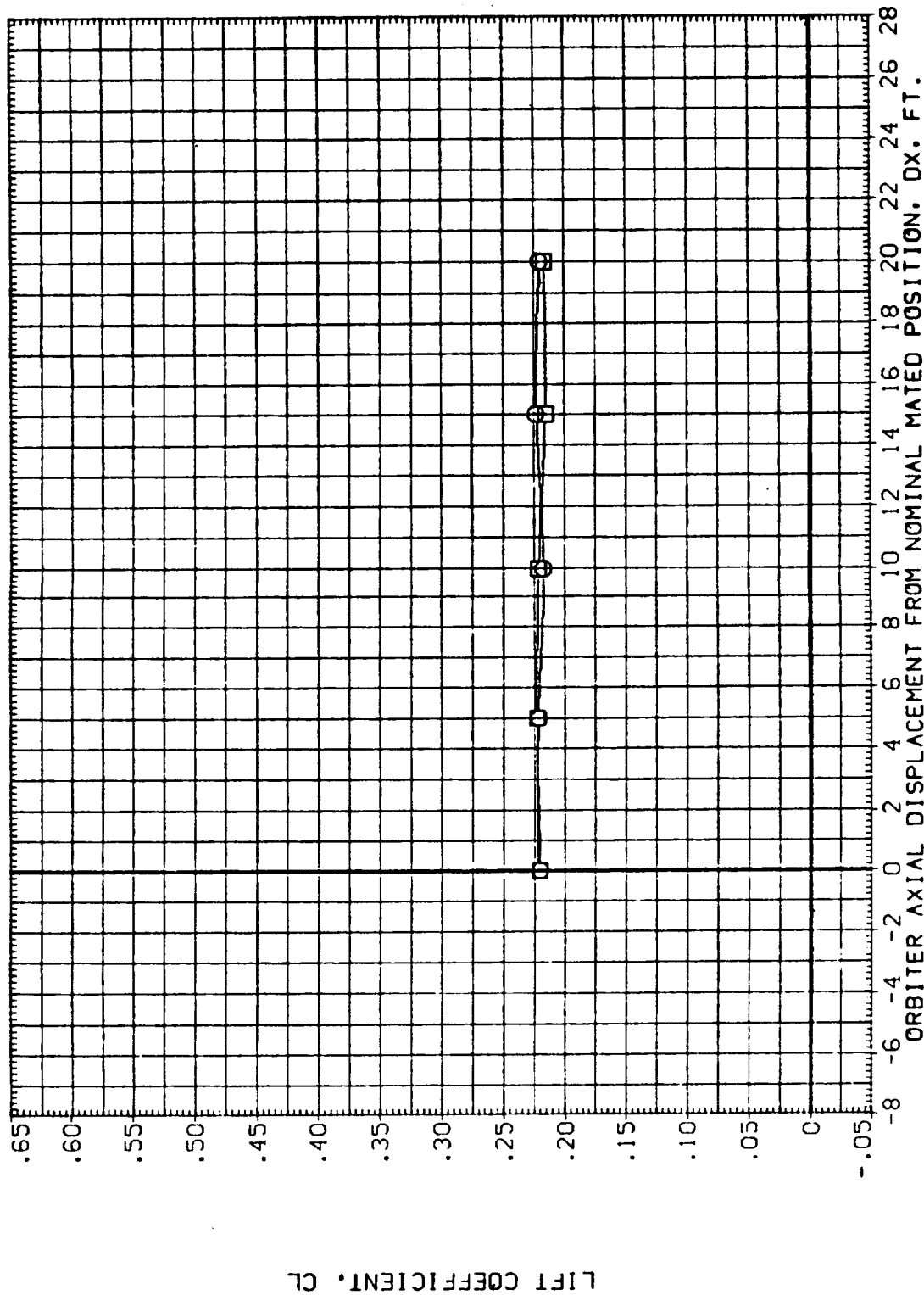


FIG. 67 EFFECT OF ORBITER POSITION IN THE TUNNEL

(A) ALPHA= 6.00

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (INH048)    ARC 14-120(CA23B) 02S!  
 (INH047)    ARC 14-120(CA23B) 02S!

ELEVON    BETA    DZ  
 .000    .000    3.000  
 .000    .000    50.000

REFERENCE INFORMATION  
 SREF    2690.0000    50.FT.  
 LREF    474.8100    IN.  
 BREF    936.6800    IN.  
 XMRP    1109.0000    IN. X0  
 YMRP    .0000    IN. Y0  
 ZMRP    375.0000    IN. Z0  
 SCALE    .0125

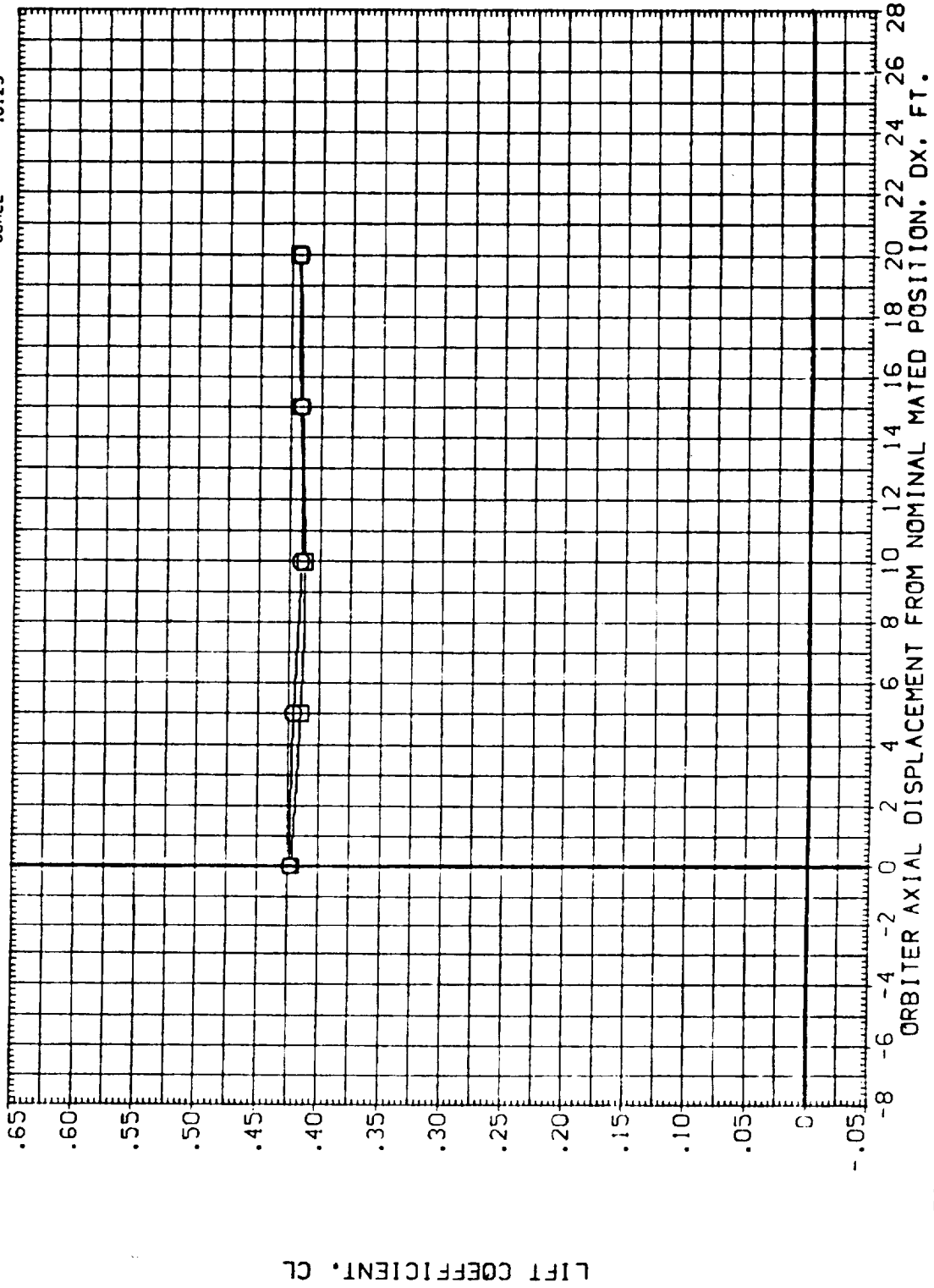


FIG. 67 EFFECT OF ORBITER POSITION IN THE TUNNEL

(B)ALPHA0= 10.00

DATA SET SYMBOL      CONFIGURATION DESCRIPTION  
 (INH048)      ARC 14-120(CA238) 02SI  
 (INH047)      ARC 14-120(CA238) 02SI

ELEVON    BETA    DZ  
 .000    .000    3.000  
 .000    .000    50.000

REFERENCE INFORMATION  
 SREF    2690.0000    50. FT.  
 LREF    474.8100    IN.  
 BREF    936.6800    IN.  
 XMRP    1109.0000    IN. X0  
 YMRP    .0000    IN. Y0  
 ZMRP    375.0000    IN. Z0  
 SCALE    .0125

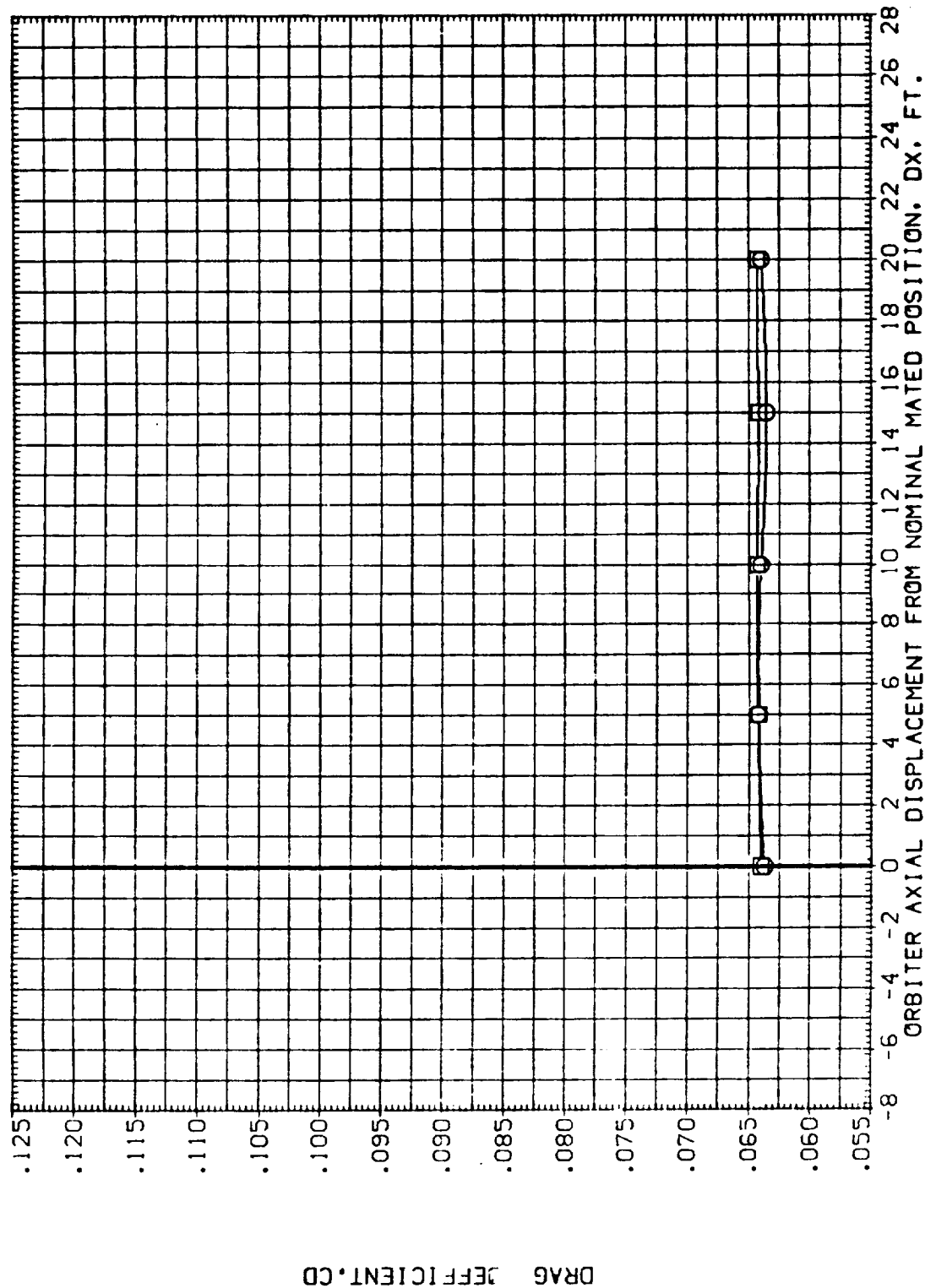


FIG. 67 EFFECT OF ORBITER POSITION IN THE TUNNEL

(A) ALPHA = 6.00

DATA SET SYMBOL:   
 (IN=048)   
 (IN=047)

CONFIGURATION DESCRIPTION   
 ARC 14-120(CA238) 0251   
 ARC 14-120(CA238) 0251

ELEVON BETA DZ   
 .000 .000 3.000   
 .000 .000 50.000

REFERENCE INFORMATION   
 SREF 2690.0000 SO.FT.   
 LREF 474.8100 IN.   
 BREF 936.6800 IN.   
 XMRP 1109.0000 IN. X0   
 YMRP .0000 IN. Y0   
 ZMRP 375.0000 IN. Z0   
 SCALE .0125

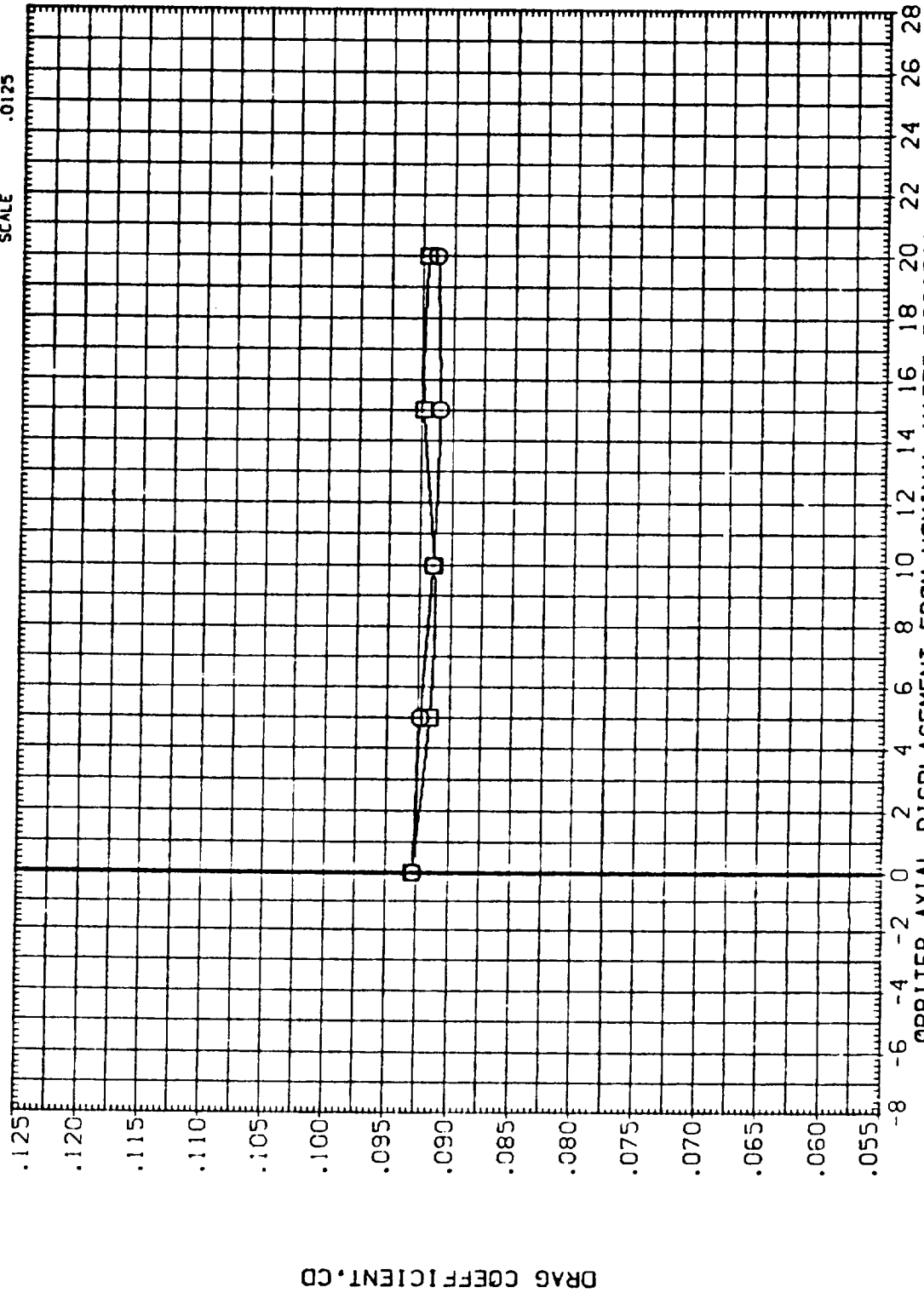


FIG. 67 EFFECT OF ORBITER POSITION IN THE TUNNEL

(B)ALPHAC= 10.00

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
(1NH048)    8    ARC 14-120(CA238)    02S1  
(1NH047)       ARC 14-120(CA238)    02S1

ELEVON    BETA    DZ  
.000    .000    3.000  
.000    .000    50.000

REFERENCE INFORMATION  
SREF    2690.0000    SQ.FT.  
LREF    474.8100    IN.  
BREF    936.6800    IN.  
XMRP    1109.0000    IN. X0  
YMRP    .0000    IN. Y0  
ZMRP    375.0000    IN. Z0  
SCALE    .0125

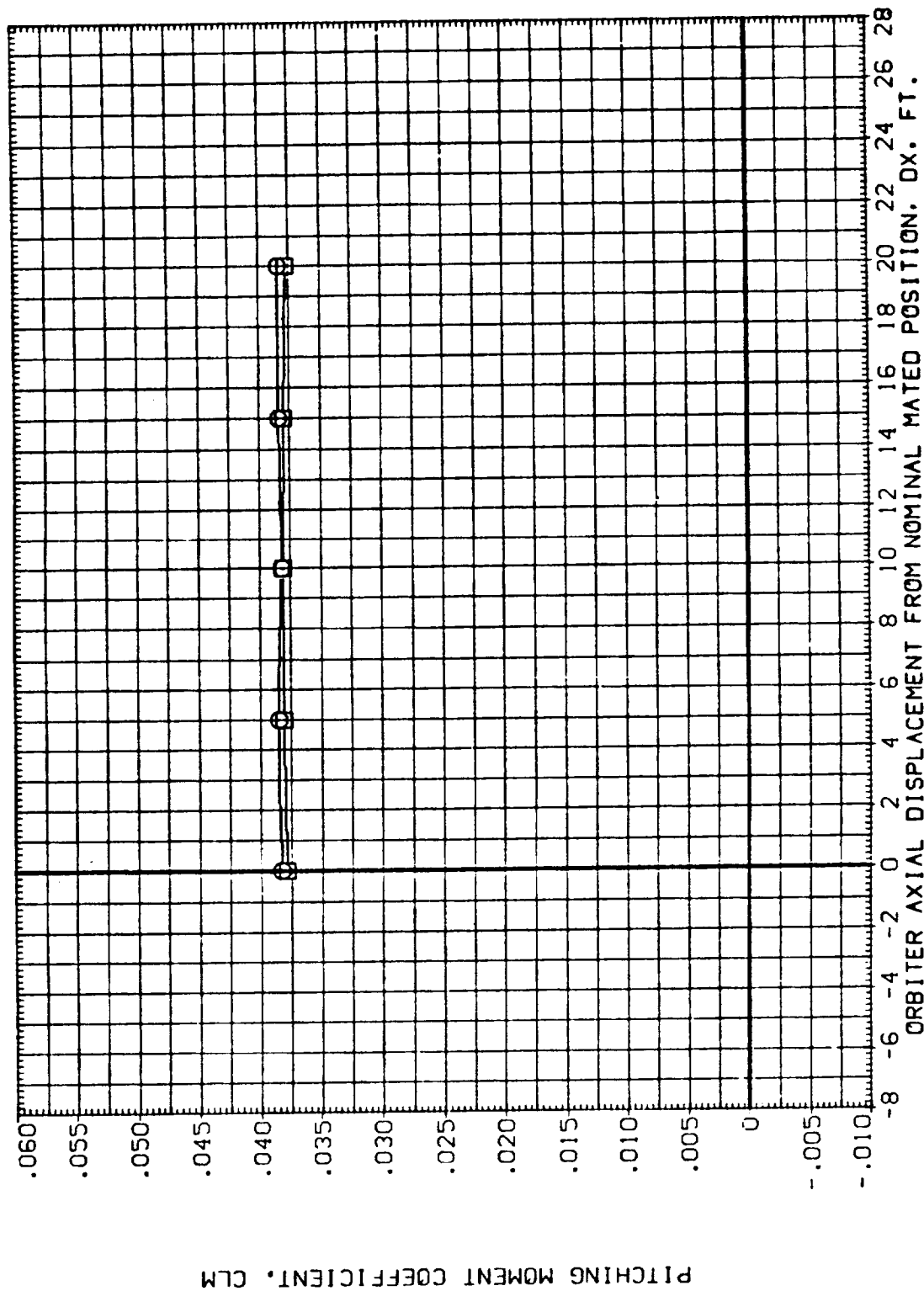


FIG. 67 EFFECT OF ORBITER POSITION IN THE TUNNEL

(A) ALPHA0 = 6.00

DATA SET SYMBOL  
 (INH048)  
 (INH047)

CONFIGURATION DESCRIPTION  
 ARC 14-120(CA238) 02S1  
 ARC 14-120(CA238) 02S1

ELEVON  
 .000  
 .000

BETA  
 .000  
 .000

DZ  
 3.000  
 50.000

REFERENCE INFORMATION  
 SREF 2690.0000 50.FT.  
 LREF 474.8100 IN.  
 BREF 936.6800 IN.  
 XMRP 1109.0000 IN. X0  
 YMRP .0000 IN. Y0  
 ZMRP 375.0000 IN. Z0  
 SCALE .0125

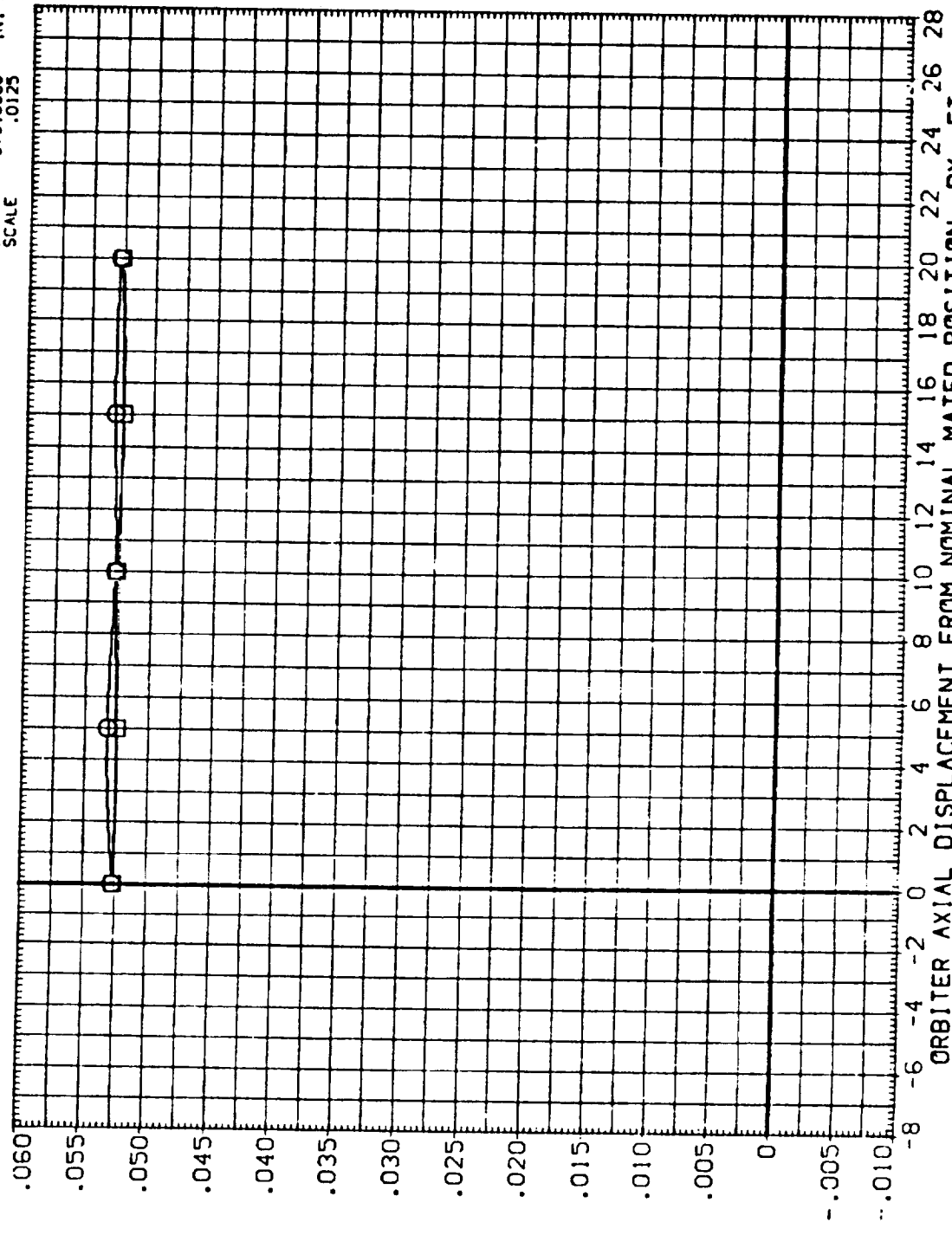


FIG. 67 EFFECT OF ORBITER POSITION IN THE TUNNEL  
 (B) ALPHA0= 10.00

